

Return to OPB

SI 2163-2475

OPB File Copy

Senate Hearings

Before the Committee on Appropriations

Department of the Interior and Related Agencies Appropriations

92^d CONGRESS, SECOND SESSION

Fiscal Year 1973

DEPARTMENT OF THE INTERIOR AND RELATED AGEN- CIES APPROPRIATIONS FOR FISCAL YEAR 1973

FRIDAY, MARCH 10, 1972

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., in room 1114, New Senate Office Building, Hon. Alan Bible (chairman) presiding.
Present: Senator Bible.

SMITHSONIAN INSTITUTION

STATEMENT OF S. DILLON RIPLEY, SECRETARY

ACCOMPANIED BY:

JAMES BRADLEY, UNDER SECRETARY
ROBERT A. BROOKS, DEPUTY UNDER SECRETARY
CHARLES BLITZER, ASSISTANT SECRETARY, HISTORY AND ART
DAVID CHALLINOR, ASSISTANT SECRETARY, SCIENCE
WILLIAM W. WARNER, ASSISTANT SECRETARY, PUBLIC
SERVICE
RICHARD L. AULT, DIRECTOR OF SUPPORT ACTIVITIES
T. AMES WHEELER, TREASURER
JAMES F. JAMESON, DIRECTOR, OFFICE OF PROGRAMING AND
BUDGET
RICHARD S. COWAN, DIRECTOR, NATIONAL MUSEUM OF
NATURAL HISTORY
MICHAEL COLLINS, DIRECTOR, NATIONAL AIR AND SPACE
MUSEUM
THEODORE H. REED, DIRECTOR, NATIONAL ZOOLOGICAL PARK
DANIEL J. BOORSTIN, DIRECTOR, NATIONAL MUSEUM OF HIS-
TORY AND TECHNOLOGY
JOSHUA C. TAYLOR, DIRECTOR, NATIONAL COLLECTION OF
FINE ARTS
JOHN R. KINARD, DIRECTOR, ANACOSTIA NEIGHBORHOOD
MUSEUM
DAVID F. HERSEY, DIRECTOR, SCIENCE INFORMATION
EXCHANGE

INTRODUCTION OF WITNESSES

Senator BIBLE. The hearing will come to order.

Dr. Ripley, will you please introduce those with you at the witness table.

Dr. RIPLEY. Thank you, Mr. Chairman. I have brought a number of witnesses today because of the importance of this hearing and the variety of our programs.

Senator BIBLE. Very well, just introduce those at the table.

Dr. RIPLEY. Mr. Bradley on my left is Under Secretary, Mr. Jameson on his left is our Budget Officer, Mr. Wheeler on my right is our Treasurer, and Dr. Challinor, on my far right, is Assistant Secretary for Science.

PREPARED STATEMENT

Senator BIBLE. There will be placed in the record at this point the general statement submitted with the budget justification for Smithsonian Institution, together with other statements furnished us containing information about the agency.

(The statement follows:)

SMITHSONIAN INSTITUTIONFISCAL YEAR 1973 ESTIMATES OF APPROPRIATIONSGENERAL STATEMENT

In September 1971 the Smithsonian Institution celebrated its 125th anniversary. Our growth and public service contributions over this period have been noteworthy. The Institution now maintains public exhibits in eight buildings representative of the arts, American history, aeronautics and astronautics, technology, anthropology, and the natural sciences. The Renwick Gallery of American design and crafts joined this distinguished company in January 1972. The National Zoological Park presents living animal exhibits. We preserve for reference, exhibit, and study millions of items of scientific, cultural, and historic importance. Research is performed throughout the world in a wide range of the natural and physical sciences and in the history of cultures, technology, and the arts. We present performances of American folk arts and crafts in order to help keep alive the rich cultural traditions of the Country. Education programs are conducted throughout the Institution at all academic levels. Publication, information, traveling exhibition, and neighborhood museum programs help to bring the wealth of Smithsonian resources to those persons unable to visit our major museums and our research laboratories.

The Smithsonian's FY 1972 budget presentations identified a number of continuing goals and objectives. These remain valid and provide the context for consideration of our budget requirements for the coming year. For FY 1973, the Institution is requesting appropriations totaling \$106,923,000 distributed among four major budget categories.

	Base for FY 1973	Requested Increase	FY 1973 Estimate
"Salaries and Expenses"	\$44,170,000 ^{1/}	\$ 8,794,000	\$ 52,964,000
Science Information Exchange	1,300,000	300,000	1,600,000
Special Foreign Currency Program	3,500,000	2,500,000	6,000,000
Construction	6,347,000	40,012,000	46,359,000
Totals	\$55,317,000	\$51,606,000	\$106,923,000

Highlights of the Institution's program plans are as follows.

Support the quality of the professional staff effort within the Smithsonian to sustain the basic scholarly program.

The attainment of this objective depends largely on achieving an adequate level of technical and financial support for our scientists and historians. With the close backing of the President and the Congress, the Institution made a substantial breakthrough in its FY 1972 appropriation by winning additional technician, electronic data processing development, and research project funding for the National Museum of Natural History. The Smithsonian Astrophysical Observatory is enabled to undertake the first phase of its multimirror telescope development. Additional funding for the Chesapeake Bay Center, the Smithsonian Tropical Research Institute, and for the Radiation Biology Laboratory is permitting these biological research stations to play more active and productive roles in understanding ecological forces through interdisciplinary research studies. Our research scholars are studying and documenting for publications and exhibitions man's cultural, technological, and artistic achievements. The vigorous prosecution of mutually reinforcing lines of collection,

^{1/} Excludes \$531,000 not restored to base by the Office of Management and Budget for a total FY 1972 appropriation of \$44,701,000.

laboratory, and field studies of national concern is one of our major objectives. These programs remain among our very highest priorities in the FY 1973 budget requests. Throughout the Institution there are increasing instances of inter-bureau cooperation. References to this activity, which strengthens and unifies the Smithsonian as a single organization devoted to research and public services, appear throughout the program descriptions appearing in this budget.

Emphasize the Smithsonian's role as a community of educators

We are an institution for communicating with the public at large. To do this we serve a dual educational role. By making our collections, library, and research facilities available to students and to pre- and post-doctoral visitors who work under the supervision and guidance of our professional staff, we offer a rich variety of resources and perspectives available for productive research and training in scientific and humanistic endeavors. In turn, these students and visiting researchers bring an infusion of knowledge and vitality to our own research efforts.

Our second role is to make our exhibits more useful to elementary and secondary schools as provocative supplements to classroom instruction. We do this through guided tours and the preparation and distribution of traveling exhibits, classroom use publications, and other home and classroom audio and visual materials. The development of our Academic and Educational Programs and of the related educational programs in our national museums and galleries continues to occupy our closest attention.

Contribute to the reappraisal of the American Experience by portraying our Nation's course over the past 200 years and suggesting paths for our continued development

The Smithsonian Institution is preparing to play a central and major role in the celebration of the Bicentennial of the American Revolution. The Bicentennial presents an opportunity for a wide-ranging and creative use of the Smithsonian's great capabilities and resources. We welcome the challenge and believe that our program, which has as a theme The American Experience, will meet all expectations. We will offer imaginative and exciting events and, at the same time, we will make contributions that will continue to reward the general public and the scholarly community for many years to come. The Bicentennial undertaking at the Smithsonian will involve almost every department. Key roles will be played by the National Museum of History and Technology, the National Collection of Fine Arts, the National Portrait Gallery, and the proposed Bicentennial Outdoor Museum.

With the support of the FY 1971 and 1972 appropriations for this purpose, and with every possible commitment of the Institution's regular budget, we have completed an overall Bicentennial plan and have made a strong beginning on the program itself. The work must be spread out over the intervening years, allowing lead time for the research, design, collecting, and construction which go into the production of major exhibitions, and for the nationwide information-gathering that must take place. Phased scheduling will assure completion of the various program components by the Bicentennial year.

Closely related to this effort is the work and regular program plans of other history and art activities, our neighborhood museum, and our performing arts group. The Joseph H. Hirshhorn Museum and Sculpture Garden will be completed in about December 1972 and after essential outfitting, with funds requested in the FY 1973 budget, and exhibits installation will be open to the

public. At a time of rapidly changing technology and national and international tensions, there is an urgent need to discover and appreciate man's special cultural traditions and achievements.

Improve man's understanding of the physical and natural environment upon which human society depends

FY 1971 and 1972 funds were appropriated for coordinated environmental research at the Smithsonian. This support enabled the separate bureaus of the Institution for the first time to develop jointly a plan to monitor, assemble, and analyze biological and physical data on specific important ecosystems, hopefully to help predict the consequences of environmental change, and, thereby, contribute to better management of our natural world. The Institution has unique capabilities for such studies. These include highly competent personnel; the largest collections of plants and animals in the world (with detailed distribution, abundance, and other associated data); long-term experience with measuring the characteristics of solar radiation reaching the earth and other astrophysical data; and the availability of permanent and protected field-research sites in both temperate and tropical zones. In addition, the Smithsonian enjoys particularly favorable relations with its scientific colleagues and institutions in virtually every country of the world.

Environmental Sciences Program activity has included such priority items as the organization of an interdisciplinary program and establishment of a continuing mechanism for its operations; the selection of sites of highest priority for study; and the implementation of interrelated studies of these sites.

The "World of Living Things", initiated in FY 1972, is a major exhibition now under production in the National Museum of Natural History to serve as an introduction to ecology and the exposition of worldwide environmental balances and imbalances. Scheduled completion is mid-FY 1973 with funding requested in that year's budget.

Establish a great national museum on the Mall to recreate the experience of man's great adventure: flight and space exploration

The redesign of the National Air and Space Museum building is well underway using the \$1,900,000 appropriated to the Smithsonian in the current fiscal year. This redesign will be completed and we will be ready to award a construction contract in FY 1973. We are requesting construction funds of \$40,000,000 plus essential additional operating funds for the National Air and Space Museum itself to enable it to step-up the very substantial job of research, collections preparation, and exhibits planning and production that must take place while the building is under construction if the July 4, 1976 opening date is to be met.

This building, in addition to being a showcase for historic machines, will also encompass a wide variety of educational exhibits concerned with the new science and technology of the Space age. The public will be able to see gathered together under one roof, for the first time, an explanation of how man has used a broad range of disciplines to achieve flight, and how he may extrapolate these into the future. The impact of flight upon our environment and our culture will be investigated and exhibited to the public using the latest multi-media techniques.

Respond to the needs of the Nation's museums to assist them present to their public an appreciation of the past and portents of the future

Public Law 91-629 approved December 31, 1970, reauthorized appropriations for the National Museum Act through FY 1974 and funding of \$1,000,000 to the Smithsonian Institution each year. Of this amount \$600,000 was granted by the Congress for FY 1972. Funding at the full \$1,000,000 as requested in the FY 1973 budget will permit the Smithsonian Institution to support fully all aspects of the National Museum Act.

The requested total funding would be used to meet the following basic needs of the nation's museums: cataloging and data access; museum laboratory centers, especially for conservation of the Nation's treasures; training of museum personnel; research in museum techniques; and the preparation of manuals of instruction.

Improve the management of scientific and scholarly information

In our role as custodian of the Nations' collections and as a principal producer of basic research we must try to serve the public interest in improved management of scientific and scholarly information. Closely related to this effort must be the conservation and preservation of the sources of this information. The FY 1972 appropriation provided some slight additional support for this need. We must do better. In order to show more effectively how improved management would serve Smithsonian needs for research and public needs for exhibition, publications, and problem solving, the FY 1973 budget request brings together under the heading of "Documentation and Conservation" our requirements for photography, the accessibility of archives, library resources, and the conservation of the National Collections.

In order to obtain these objectives the Institution must also develop an adequate level of administrative and other supporting services including the maintenance, operation, and protection of buildings and facilities.

The budget estimates to help accomplish the Smithsonian's goals and objectives are presented in four sections:

- | | |
|---|--------------|
| A. "Salaries and Expenses" for regular operating programs in the museums, galleries, zoological park, research laboratories, and other program units; for special programs of an Institution-wide nature and of unusual importance for national research, education, exhibition, and museum assistance needs; for documentation and conservation; and for program support purposes..... | \$52,964,000 |
| B. "Salaries and Expenses" of the Science Information Exchange..... | \$ 1,600,000 |
| C. Special Foreign Currency Program in archeology and related disciplines, systematic and environmental biology, astrophysics and earth sciences, and museum programs (dollar equivalent)..... | \$ 6,000,000 |
| D. Planning, restoration, renovation, and construction related to Smithsonian buildings and facilities | \$46,359,000 |

Each of these requests is summarized below and justified in the following sections of the budget.

A. "Salaries and Expenses"

<u>1971 Actual</u>	<u>1972 Appropriation</u>	<u>1973 Estimate</u>
\$36,895,000	\$44,170,000	\$52,964,000

The total increase, including program and necessary pay funds, requested for "Salaries and Expenses" is \$8,794,000, distributed by program as follows (see pages A-2 and A-3 for organizational distribution):

(In thousands of dollars)		
<u>Base for</u>	<u>Requested</u>	<u>FY 1973</u>
<u>FY 1973</u>	<u>Increase</u>	<u>Estimate</u>
\$15,881	\$2,199	\$18,080

Science

To correct serious deficiencies in the availability of technicians and other supporting staff, scientific equipment, services, and laboratory supplies and materials, and to augment programs with key professional research staff and improved instrumentation in order that the Smithsonian can continue its traditional basic investigations and educational services in anthropology, biology, geology, and the space sciences and technology which are fundamental to a better understanding of man and his environment.

History and Art

\$ 5,615	\$2,298	\$7,913
----------	---------	---------

To provide essential professional and support staff, objects for the collections, and services, supplies, and equipment, furnishings, and fixtures required for the basic operations of the Institution's established and developing museums and art galleries in order that they can tell the story of this Country's growth and development to millions of Americans and citizens of other countries through research, exhibition, education, and publications programs.

Public Service

\$ 937	\$ 245	\$1,182
--------	--------	---------

To provide additional support to certain of those Smithsonian activities which reach out to serve a wider public.

Special Programs

\$ 2,902	\$1,373	\$4,275
----------	---------	---------

This funding is aimed at strengthening the Institution's ability to perform special research projects, present important and timely exhibitions, and extend its public education and museum assistance services.

	(In thousands of dollars)		
	Base for FY 1973	Requested Increase	FY 1973 Estimate
<u>Documentation and Conservation</u>	\$1,759	\$ 597	\$2,356

Requested appropriation will permit the Smithsonian to improve the conservation of objects, the acquisition and processing of library materials documenting collections and research, and the restoration, preservation, and cataloging of archival and photographic materials.

<u>Program Support</u>	\$17,076	\$2,082	\$19,158
------------------------	----------	---------	----------

Includes those administrative and support activities which serve the program functions of the Institution and maintain, operate, and protect buildings and facilities.

Totals	\$44,170	\$8,794	\$52,964
--------	----------	---------	----------

B. Science Information Exchange

<u>1971 Appropriation</u>	<u>1972 Appropriation</u>	<u>1973 Estimate</u>
\$ 1/	\$1,300,000 2/	\$1,600,000

A funding increase of \$500,000 is requested to meet the essential costs of maintaining and developing data input on research in progress as a national information service to the federal and nonfederal research communities.

1/ Funded under contract from the National Science Foundation at \$1,400,000 for 10 months (an annual rate of \$1,680,000).

2/ Excludes proposed supplemental of \$300,000.

C. Special Foreign Currency Program

<u>1971 Appropriation</u>	<u>1972 Appropriation</u>	<u>1973 Estimate</u>
\$2,500,000	\$3,500,000	\$6,000,000

The need is to provide adequate support, without a drain on hard dollars, for overseas archeological work, systematic and environmental biology, astrophysical and earth sciences studies, and museum programs. The development and expansion of regular programs, as well as the opening up of important new research possibilities, especially in India and Poland, have resulted in a rising demand for excess foreign currency funds by American Institutions of higher learning.

D. Renovation, Restoration, and Construction

<u>1971 Appropriation</u>	<u>1972 Appropriation</u>	<u>1973 Estimate</u>
\$7,125,000	\$6,347,000	\$46,359,000

Included in this request is \$675,000 for planning of the large cat exhibition and repairs at the National Zoological Park; \$5,409,000 for restoration, renovation, repairs, and improvements to Smithsonian buildings and facilities; \$40,000,000 for construction of the redesigned National Air and Space Museum; and \$275,000 for the construction planning of Bicentennial Park.

Total 1973 Appropriations Requested \$106,923,000.

SMITHSONIAN INSTITUTION
"SALARIES AND EXPENSES"

REPORT ON THE NUMBER OF PERMANENT POSITIONS
 BY ORGANIZATION UNIT

	1971 Actual	1972 Estimate	1973 Estimate	Increase 1973 Over 1972
National Museum of Nat. History	271	335	373	38
Smithsonian Astro. Observatory	57	57	58	1
Smithsonian Trop. Res. Inst.	45	52	58	6
Radiation Biology Laboratory	40	46	48	2
Off. of Environmental Sciences	34	39	42	3
National Air & Space Museum	41	44	64	20
Center for the Study of Man	7	10	13	3
Center for Short-Lived Phen.	1	3	3	0
Nat. Zoological Park	247	286	286	0
Nat. Museum of Hist. & Tech.	158	157	163	6
Nat. Collection of Fine Arts	70	72	78	6
Nat. Portrait Gallery	38	39	46	7
J. H. Hirshhorn Mus. & Sc. Gard.	18	21	35	14
Freer Gallery of Art	7	8	14	6
Archives of American Art	0	11	12	1
Nat. Armed Fcs. Mus. Adv. Bd.	8	6	7	1
Anacostia Neighbor. Museum	11	15	18	3
Off. of International Activities	8	9	10	1
International Exch. Service	9	9	9	0
Div. of Performing Arts	7	7	10	3
Off. of Public Affairs	12	12	13	1
Am. Revolution Bicentennial	2	2	2	0
Environmental Sciences Prog.	3	8	8	0
Major Exhibitions	0	0	0	0
Nat. Museum Act	0	3	3	0
Academic & Ed. Programs	18	22	24	2
Research Awards	0	0	0	0
Conservation Analytical Lab.	11	13	16	3
Smithsonian Archives	6	6	8	2
Smithsonian Inst. Libraries	54	59	67	8
Registrar	30	31	32	1
Photographic Services	20	23	27	4
Secretary	38	40	47	7
General Counsel	9	9	10	1
Treasurer	31	33	35	2
Personnel	31	32	35	3
Press	25	25	26	1
Inf. Services Division	14	14	17	3
Off. of Smithsonian & Nat. Museum Prog.	9	9	9	0
Exhibits	165	159	159	0
Supply	21	21	21	0
Management Analysis Off.	9	10	10	0
Duplicating	7	7	8	1
Other Central Support	13	13	13	0
Bldgs. Manage. Dept.	768	793	877	84
TOTAL	2,373	2,570	2,814	244

SMITHSONIAN VISITORS
(By fiscal year)

Fiscal Year	Smithsonian Institution Building	Arts and Industries Building	Museum of Natural History	National Air and Space Building	Freer Gallery of Art	Museum of History and Technology	Fine Arts & Portrait Gallery	Total ^{2/}
1961	1,024,526	2,912,371	2,047,973	987,858	130,746	(1)	(3)	7,103,474
1962	1,222,112	3,471,050	2,113,053	1,986,319	130,597	(1)	(3)	8,923,131
1963	1,630,280	3,534,182	2,288,397	2,673,618	183,359	(1)	(3)	10,309,836
1964	1,311,061	2,457,243	2,512,306	1,854,186	168,625	2,509,774 ^{1/}	(3)	10,813,195 ^{2/}
1965	1,065,635	2,028,175	3,051,472	1,705,683	210,972	5,091,776	(3)	13,153,713
1966	870,010	1,746,715	2,988,006	1,494,922	222,089	4,829,112	(3)	12,150,854
1967	1,020,312	1,638,873	3,409,957	1,484,422	212,920	5,546,102	(3)	13,312,586 ^{4/}
1968	847,176	1,344,622	3,257,957	1,123,698	169,533	4,750,023	30,888	11,523,897 ^{4/}
1969	275,259 ^{5/}	1,493,141	2,916,749	1,225,959	179,374	4,174,071	166,177	10,430,730 ^{7/}
1970	5/	2,557,155 ^{6/}	3,269,791	1,839,373	217,305	5,483,555	216,523	13,583,702 ^{8/}
1971	681,255	1,985,732	3,456,755	1,337,445	190,425	5,955,128	194,468	13,801,208

1/ Museum of History and Technology opened January 1964.

2/ July-August 1964, certain Smithsonian Institution buildings were open 4:30 to 10 p.m. for the first time.

3/ National Collection of Fine Arts opened May 1968, and the National Portrait Gallery in October 1968.

4/ Reflects the significant decrease in visitors to the Nation's Capital in the first six months of CY 1968, due to unsettled local conditions.

5/ Building closed for renovation October 1968.

6/ Since the first display of the lunar sample in September 1969, visitors to this building have averaged approximately 270,000 per month

7/ Fiscal year 1969 visitor totals represent the effect of local conditions in late 1968 on visitor attendance.

During CY 1969, a total of 12,438,909 visitors came to the Smithsonian, an increase of 25 percent over CY 1968.

8/ Reflects a significant increase of 30 percent in visitors to the Smithsonian's Museums and Galleries.

9/ An additional 5,000,000 visits to the National Zoological Park annually and 50,000 to the Anacostia Museum are excluded from these totals.

SIGNIFICANT EXHIBITS, FISCAL YEAR 1971

Natural History Building

Japanese Armor
Indian Images
Moon Rock

Reptile Photo Exhibit
Flora of North America

History & Technology Building

Music Machines--American Style
Do It the Hard Way--Rube Goldberg
Electricity Hall Section

Ghandi Exhibit
Automat
Campbell Museum Collection

National Air & Space Museum

Apollo 14
NASM Art Exhibit

Robert McCall Exhibit

Arts & Industries Building

Hand of Man in America
Finnish Design

Woman

Anacostia Neighborhood Museum

Black Patriots of the American
Revolution
Lorton Reformatory: Beyond Time
Moments - A Photographic Exhibit

"...Toward Freedom"
D.C. Art Association - Third
Annual Exhibit

Performing Arts

Folk Festival on the Mall - Fourth Annual Event

Fine Arts and Portrait Gallery Building

Boris Anisfeldt
Black Artists of the 1930's and
1940's (Education)

William H. Johnson
Thomas Eakins
William Glackens Drawings

SUBCOMMITTEE PROCEDURE

Senator BIBLE. I am going to proceed a little differently this morning. I am going to hear a number of these people of whom I will ask only a few questions rather than holding them here all morning.

I see Mr. Collins in the audience and I see Dr. Reed out there. I am only going to ask them two or three questions each and then they can be on their way back to their airplanes and to their pandas. [Laughter.]

Do you have any others whom I would be apt to be asking only one or two questions?

Dr. RIPLEY. Yes, sir; we have Dr. Hersey, representing the Science Information Exchange.

Senator BIBLE. I think we can cover that one too.

Dr. RIPLEY. We have additional witnesses in connection with the Natural History Museum, the History and Technology Museum, the National Collection of Fine Arts, and the Anacostia Neighborhood Museum, in case you wish to ask them any special questions.

Senator BIBLE. You might be able to cover the broad questions, but I think Dr. Reed can cover the zoo, and I know Mr. Collins is going to tell me about a program that is going to cost \$40 million to build the Air Museum. I am all for it's being funded; that shouldn't take very long. So I think we should hear them maybe preliminarily. Unless you want them to hear your testimony all morning long. You can give them a copy of it.

Dr. RIPLEY. All right, we will be pleased to do this.

NATIONAL ZOOLOGICAL PARK

Senator BIBLE. Well, let me see the order in which I have my suggested questions, and I will either hear Mr. Collins first or Dr. Reed first. I think I have Dr. Reed first, really.

Dr. RIPLEY. Dr. Reed is coming to the table.

Senator BIBLE. I know Dr. Reed very well. I am very fond of Dr. Reed. The last time Paul and I went to visit him, a week later his poor old tiger died. I think that was Paul Eaton's influence. Dr. Reed, I am glad to see you. My questions to you are very short. I am impressed with your need for additional money out there. You pointed out your needs and I thought you did it very thoroughly and the need certainly has been for far too long.

How much of your requested program increase of \$185,000 is to be used to establish a grant fund to assist foreign zoos, and what will be the nature of that assistance. I am curious about that one because it looked as though you were inadequately funded to take care of your American zoo.

Dr. REED. We are inadequately funded to take care of our American zoo, but at the same time we have a great responsibility to the animals in the zoos throughout the world. We are requesting a mere \$1,000 to establish a line item which will be used to assist other zoos in the developing nations with books, sometimes medicine, and vaccine.

Senator BIBLE. What you are saying is out of that \$185,000, \$1,000 will be spent for the purpose of assisting foreign zoos?

Dr. REED. That's correct.

Senator BIBLE. That is in the nature of furnishing advice on the ills of the boa constrictor and things of that kind?

Dr. REED. That's correct. The zoo in Rangoon wrote us about bone deficiencies, rickets they were having in their tigers. We gave them our experience and advice and sent them some of the minerals that we use that they were unable to obtain in that area of the world. As a result of that, the tigers straightened up and the bones grew as they should. We receive many letters about zoo problems from all over the world and we try to give what assistance we can, particularly with books and scientific information, and occasionally medicine of this type.

Dr. RIPLEY. I finished a letter yesterday, Senator, to a zoo director in India saying we would send three packets of sample foods for his ducks which are an endangered species.

Senator BIBLE. Well, I just wanted to know how much money went for that purpose and I think assistance is perfectly okay.

CAPITAL IMPROVEMENT PROGRAM

Now, on your construction at the zoo, Dr. Reed, you have a capital improvement program of \$675,000, which is an increase of \$475,000 over the amount appropriated for the current year.

The justification will be printed in the record.

(The justification follows:)

CONSTRUCTION AND IMPROVEMENTS
NATIONAL ZOOLOGICAL PARK

1971 Appropriation.....\$200,000
1972 Appropriation.....\$200,000
1973 Estimate\$675,000

An appropriation of \$675,000 is requested for planning the new lion and tiger exhibits and for renovation and repairs of existing facilities at the National Zoological Park.

During the past year the architectural firm of Faulkner, Fryer and Vanderpool and landscape architect Lester Collins have been preparing a new and revised Master Plan for the entire Zoo as requested by the Commission of Fine Arts. This plan will emphasize the animal exhibits in a park-like setting, minimizing the architectural features, such as buildings. The latest techniques in animal exhibition, management, care, and education are being incorporated into this plan. At the same time, the eighty-year old Zoo continues to be used by millions of visitors from all over the country. Renovations and repairs must continue in order to keep the present zoo habitable for the animals and enjoyable to the visitors even while plans are being completed for a fully modernized Zoo.

The National Capital Planning Commission and the Fine Arts Commission have given preliminary approval to the Master Plan and it is believed that final approval will come in March 1972.

Funds are requested in the following categories:

1. Planning (\$275,000)

Funds in the amount of \$275,000 are requested to cover architectural engineering fees for construction design for the large cat exhibit.

This exhibit will consist of three large outdoor, all weather exhibits for lions and tigers separated from the public by water moats. The public will be able to view these animals without hinderance by bars or other visual obstructions in a well planned, attractive, and ecological type exhibit. There will be family groups of these magnificent popular cats for the education and enjoyment of the visitors. Three glass-fronted exhibit cages will show the animals during inclement weather or mothers with very young cubs. Ample off-exhibit space for animal dens will also be provided. Three small areas of educational and graphic materials on the exhibits will be available to the public. This exhibit will be located on the hill presently occupied by the 1890 Lion House. This old building will be removed to make way for the new modern exhibit. Plans for the new quarters for the smaller cats, such as the leopards, pumas, jaguars, etc., will be submitted and funds requested in the future.

2. Repairs and Renovations (\$400,000)

Funds in the amount of \$400,000 are requested to continue the program of renovation and repairs of existing facilities. This funding is required to keep the old part of the Zoo in use for the visiting public; for the care and comfort of the animals; and to keep the new buildings in good condition so that in the future the Zoo will not be faced with an almost overwhelming workload of repairs necessary to just keep the buildings open. Funds will be used to repair and replace some of the old free standing cages that house some of the smaller animals; repair sidewalks; and purchase essential building equipment, such as sliding doors for the elephant house; and for major landscape projects. These renovation and repair projects are accomplished, keeping in mind the Master Plan for the renovation of the Zoo and the projected life expectancy in relation to eventual replacement. One of the major projects of the coming year will be the repair and/or replacement of sidewalks, as necessary, in the Zoo, such as those at the Bear Dens and the Elephant House.

PROPOSED PROJECTS

Senator BIBLE. Tell me about the projects for which this appropriation will be used?

Dr. REED. Of the \$675,000, sir, \$275,000 will be used for planning. The lion and tiger exhibit will be the first item that we wish to plan for. This will be a rather magnificent exhibit, not too magnificent, but really an excellent exhibit that meets all of the psychological and physiological needs of the lions and tigers and it will be real nice for the people. We want to go into planning for that, and we want to go into planning for the remodeling of the duck ponds, and remodeling the present monkey house and remodeling the puma house. There are four items, of which the major item is the new large feline exhibit.

An amount of \$400,000 will be used for renovation or repair of the present zoo. These are items we feel must be done now before the master plan is completed. Such things as repairing the sidewalks in front of the bears and in front of the elephant house, these are over 40 years old. They have buckled, cracked and split and we must replace those. Such things as repairing roofs. There is a good deal of work that needs to be done in removing trees.

So, these are small items which will be done, landscaping, planning and so forth, with the master plan in mind, but to keep the present zoo operational for its visitors during the next few years.

MASTER PLAN

Senator BIBLE. Your master plan calls for modernizing and updating the zoo and it certainly does need it. It needs it badly. How many years does your master plan require—5-year plan, 10-year plan?

Dr. REED. The master plan has not yet been completed, it has been preliminarily approved but not finally approved by the reviewing bodies, the Commission of Fine Arts and the National Capital Planning Commission. We have not yet set the time schedule on this. I believe the time required to completely modernize the zoo will depend upon how the money comes in. I would hope it could be done within 10 years or less, depending on the financing.

PLAN COST

Senator BIBLE. What type of money are we talking about in total?

Dr. REED. At the present time I am unable to say exactly. We originally planned for a \$17 million expansion back in 1961, but, of course, it takes more money to build things now. I would expect it would cost an additional \$35-\$40 million before we are through.

Senator BIBLE. You call it a \$40 million program. Of that amount, and of course, I am not holding you to this, how much of that would be a Federal dollar and how much of it would be a donated dollar, or is it totally Federal dollars?

Dr. REED. At the present time I would expect all of it to be Federal dollars.

Senator BIBLE. Are all of your operations and maintenance funded by Federal dollars? You receive some contributions?

Dr. REED. Yes, in a very minor way.

FREE ADMISSION

Senator BIBLE. Is your zoo free, I have forgotten.

Dr. REED. The zoo is free, no admission charge. Any citizen, any rank, any station can visit us free.

Senator BIBLE. Is that true of the San Diego Zoo?

Dr. REED. No, sir; they charge \$1.50 admission.

Senator BIBLE. That is a great zoo, I would like to see yours like that.

Dr. REED. They have about 250 acres and we have 156. However, the size of the zoo has nothing to do with its excellence and we plan, with your help, to be able to make this zoo in quality and excellence equal, or perhaps better.

OUTSTANDING ZOOS

Senator BIBLE. Well, being the diplomat that you are, coming from the Midwest, you have always named me about 10 zoos. I don't want you to give me the rating of the zoos, 1, 2, 3, 4, 5, but San Diego would certainly rate with the first 10, wouldn't it?

Dr. REED. Yes, along with the St. Louis Zoo, New York, Brookfield-Chicago, and others.

Senator BIBLE. The San Francisco zoo?

Dr. REED. Worldwide, probably not, nationally, yes.

Senator BIBLE. San Diego and St. Louis and the New York one is Brookfield?

Dr. REED. No; that is the Bronx Zoo. Milwaukee has one of the outstanding zoos as has Detroit. And San Francisco, San Antonio, and Philadelphia. These are all great zoos.

Senator BIBLE. If we get enough money these days, you can get enough private donors to get in competition with Marlin Perkins. He seems to get a lot of coverage and I think you can equal some of his feats, capturing wild animals and going up in the air and all of that.

Dr. REED. Thank you, sir; Marlin is a wonderful person.

Senator BIBLE. I have never met him. He seems to be a pretty agile man for a man of his years. I don't know how old he is but I guess he is past 50.

Dr. REED. He is past 65.

Senator BIBLE. That is even more remarkable. Maybe they run the cameras faster or something but he looks real good in the shots.

Dr. REED. He does have some good cameramen, I know that.

LION AND TIGER EXHIBIT

Senator BIBLE. How much is in here for the lion and tiger exhibit? You specifically called that to our attention the last time you were here.

Dr. REED. The planning money for the lion and tiger exhibit will amount to \$180,000. That is the design fee for construction drawings, and detailed plans.

Senator BIBLE. When will that planning be done, in a year?

Dr. REED. Yes, sir. We have the preliminary plans now if you care to see them. We do have our schematic plans for the animals now.

Senator BIBLE. When will the lions and tiger exhibits, that do seem to cry out for fast action, be ready to go to contract?

Dr. REED. They will be ready within the year. We hope to present

to you next year a request for construction money in our next budget. We figure about 18 months after that they will be occupied by the animals.

Senator BIBLE. Then you are talking about 3 and a half years away before they are completed?

Dr. REED. They will be completed by the Bicentennial.

Senator BIBLE. Do you have any rough idea what the total cost will be involved in that?

Dr. REED. The plans are not yet that far along. We have just a square footage and rough estimation, but we figure about \$2 million.

Senator BIBLE. I don't think I have any further questions of you, Dr. Reed.

Dr. RIPLEY. Sir, I can only say we have applied for some private funds or donations.

Senator BIBLE. Do you go to foundations for that?

Dr. RIPLEY. Yes; we do but most foundations are not interested in construction. It is hard to get bricks and mortar. In this case we are trying to get a donation as part of our construction money.

Senator BIBLE. Have you ever applied to Mutual of Omaha? They certainly are a wealthy outfit.

Dr. RIPLEY. No, sir, we haven't. We might take that into consideration.

Dr. REED. I would suspect the St. Louis Zoo might have the inside track.

Senator BIBLE. I am a policyholder of Mutual of Omaha and they don't limit their policyholders to Missouri. As a matter of fact, my former administrative assistant is a Mutual of Omaha representative. I hear her on that tube every now and then telling people what a great policy Mutual of Omaha has. That is a good idea. Make a note of that, Paul, and we will write her and see if there isn't some money available under Mutual of Omaha to help the Nation's zoo.

Dr. REED. That will be wonderful.

PANDA BEARS

Senator BIBLE. All right, tell me about the pandas.

Dr. REED. Well, sir, I don't have a great deal of information about these two particular pandas. They were presented by the Peoples Republic of China to the citizens of the United States. I do not know, first, where they are going. I don't know their age, sex, or where they come from. In fact, I know very little about these particular animals. On pandas, in general, I have very considerable knowledge. It has been increasing in the past 3 or 4 weeks, shall we say.

They are a specialized bear, it is believed, although there is a zoological difference of opinion whether they are related to the bears or to the raccoons. They live in the high bamboo forest of Southwest China, in rugged inaccessible country. Their teeth are developed for eating bamboo. They are a very specialized animal that is very attractive to the public. We don't know their numbers in the wild. One of the things I should like very much to know is the work of the Chinese zoologists and scientists in the past 4 or 5 years relative to their studies in the wild. This information is not available to us. I hope shortly it

will be available to us and perhaps we can find a great deal more about this rather wonderful animal from the remote portions of China.

Senator BIBLE. I understand there are no zoos in the United States that have pandas at the present time.

Dr. REED. That's right.

DESTINATION OF PANDAS

Senator BIBLE. The Pandas that will be presented will obviously be sent to one of the main zoos in the United States. Who is going to make that determination, the President of the United States?

Dr. REED. Yes, sir. It is my understanding that the decision will come from the White House and I presume the President will be making that decision.

Senator BIBLE. Very well, I have no further questions of you, Doctor. We wish you well and we made a note in here to try to lend a helping hand to your very fine zoo and make it finer.

Dr. REED. Thank you. I hope you will be out in the near future to see some interesting bearlike animals.

Senator BIBLE. Thank you, Doctor.

NATIONAL AIR AND SPACE MUSEUM

I think we can go now to the National Air and Space Museum. Mr. Collins. There will be placed in the record your estimate of \$40 million for construction of the National Air and Space Museum.

(The justification follows:)

CONSTRUCTION
NATIONAL AIR AND SPACE MUSEUM

1971 Appropriation.....\$	0
1972 Appropriation.....\$	1,900,000
1973 Estimate.....\$	40,000,000

The Act of August 12, 1946, established the National Air Museum as a bureau of the Smithsonian Institution. The Congress included provisions for selecting a site for a National Air Museum building to be located in the Nation's Capital. By the Act of September 6, 1958, the Congress designated a site for a building to be on the Mall from Fourth Street to Seventh Street, Independence Avenue to Jefferson Drive. At present, no structure exists on this federal land.

In 1966, the Congress enacted legislation authorizing the construction of the National Air and Space Museum but deferred appropriations for construction until expenditures for the Vietnam conflict had shown a substantial reduction. Construction plans and specifications for the proposed museum building were completed and were accepted by the Commission of Fine Arts and the National Capital Planning Commission. The cost of the building, built to those plans and specifications, was estimated to be \$40 million dollars in 1965. Unfortunately due to the rising costs of labor and materials, this same building would now cost between \$60 million and \$70 million.

The space program, with its Mercury, Gemini, and Apollo flights, has caused a considerable increase in the public's interest in aeronautical and aerospace matters. During FY 1971, almost 3.5 million visitors were counted in the Arts and Industries Building and the Air and Space Building, both of which are used to house temporarily a very small portion of the collections and exhibits of the National Air and Space Museum. With the additional space available in the new building, the National Air and Space Museum will be able to use a wide range of the more than 200 aircraft and thousands of aerospace objects in the collections to interpret the historical and technological progress of aviation and aerospace science to the millions of visitors that will come to the Museum annually. It is estimated that 5 million visitors will come to this major new museum in its first year.

The Air and Space Museum already has in its collections such historically significant aircraft as the original Wright Brothers Flyer, Lindbergh's "Spirit of St. Louis," the NC-4 (the first to fly the Atlantic), the Bell X-1 (first to exceed the speed of sound), as well as Alan Shepard's Freedom 7, John Glenn's Friendship 7, and the Apollo 11 Command Module, Columbia, to name a few.

To demonstrate and exhibit technological progress, the Museum can choose from simple rotary engines built at the turn of the century to the huge Saturn F-1 engine which produces 1 1/2 million pounds of thrust. This collection of aeronautical and aerospace items, the finest in the world, must have a new Museum to be displayed properly to the public.

This building, in addition to being a showcase for historic machines, will also encompass a wide variety of exhibits concerned with the new science and technology of the Space age. The public will be able to see gathered together under one roof, for the first time, an explanation of how man has used a broad range of disciplines to achieve flight, and how he may extrapolate these into the future. The impact of flight upon our environment and our culture will

be investigated and exhibited to the public using the latest multi-media techniques. A planetarium chamber will be included, but in addition to viewing the conventional star show, the visitor will be able to "travel" through space to the surface of the moon or the planets. Another important adjunct will be the Historical Research Center, providing not only an aerospace library and film center, but facilities for research scholars as well. This center will make available the Museum's vast resources of photographs, drawings, technical manuals, films, and other documentary and archival materials.

During a Symposium on the National Air and Space Museum held on January 18, 1971, Senator Barry Goldwater, Dr. Wernher von Braun, Congressman Frank T. Bow, and Congressman James G. Fulton jointly proposed the following resolution be presented to the Board of Regents of the Smithsonian Institution:

- That the Smithsonian Institution should press for construction of the authorized National Air and Space Museum Building;
- That a study of changes in the original approved design should be undertaken immediately in order to determine the feasibility of lowering construction costs;
- That a firm date of July 4, 1976 should be established for the opening of the new museum building as a major element of the Smithsonian Institution's contribution to the commemoration of the Bicentennial of the American Revolution;
- That consideration be given to constructing a major underground parking facility beneath the Mall in order to alleviate the increasing problem of automobile parking in the vicinity of the Mall;
- That consideration of the joint venture by the National Park Service and private capital be explored. This action would complement the requirement for parking facilities as a significant factor in construction of the National Air and Space Museum.

In consideration of the rising costs of the building and the increased public interest in air and space activities, an appropriation of \$1,900,000 for planning and redesign, and for the specifying of programs, facilities, and installations was approved by the Congress for FY 1972. With the splendid cooperation of the General Services Administration, the firm of Hellmuth, Obata, and Kassabaum, Inc. has been selected and the redesign is underway using the latest design, construction, and exhibit techniques to lower the cost of the building to \$40 million without sacrificing the intent of the building to serve as a great center, on the Mall, for public education and enjoyment and scholarly research. This is the same architectural firm that performed the original design. Based on their familiarity with program needs, it is anticipated that the redesign will proceed quickly and that the award of a construction contract will be possible in mid- FY 1973. An appropriation of \$40 million is requested in FY 1973 to meet this construction schedule and permit the Museum to be opened by July 4, 1976.

PREPARED STATEMENT

Senator BIBLE. Also I will include your prepared statement in the record.

Mr. Chairman and Members of the Committee:

I appreciate the opportunity to testify in behalf of the appropriation of \$40 million for the construction of a National Air and Space Museum.

Many friends of the museum have indicated their support for this project. The President has included the museum in his plans for the Bicentennial celebration in 1976. Many distinguished Members of both the House and Senate, representing both major political parties, have told me of their interest, and I have received numerous letters from organizations and associations throughout the country asking how they might help in bringing our plans to fruition. I know that many of these friends have also made their support of the museum known to the Members of this Committee.

Legislative History

The National Air Museum was established by Public Law 722, dated August 12, 1946, to "memorialize the national development of aviation; collect, preserve, and display aeronautical equipment of historic interest and significance; serve as a repository for scientific equipment and data pertaining to the development of aviation; and provide educational material for the historical study of aviation." The Congress included provisions for selecting a site for a

National Air Museum building to be located in the nation's capital.

Public Law 85-935, dated September 6, 1958, specified the site of the museum to be on the Mall and to occupy the block bounded by Fourth Street, on the east, Seventh Street, on the west, Independence Avenue on the south, and Jefferson Drive on the north.

Public Law 89-509, dated July 19, 1966, amended the original Air Museum legislation to change the name of the bureau to be National Air and Space Museum and changed the function of the museum to:

"Said national air and space museum shall memorialize the national development of aviation and space flight; collect, preserve, and display aeronautical space flight equipment and data pertaining to the development of aviation and space flight and provide educational material for the historical study of aviation and space flight."

The same Act authorized and directed the Regents of the Smithsonian Institution to prepare plans and construct a suitable building for the National Air and Space Museum. Appropriations for construction were deferred by the Congress until expenditures for the Vietnam conflict had shown a substantial reduction. Construction plans and specifications for the proposed museum building were completed and approved by the Commission of Fine Arts and the National Capital Planning Commission.

Exhibit Concepts

At present a small number of air and space artifacts are being exhibited in the steel shed called the Air and Space Building, and

in part of the Arts and Industries Building, which was built in 1879-81 for the United States National Museum. Because of limits on space, it is only possible to display a few of the most important items in the collection. Building design limitations have also resulted in static exhibits of artifacts with little or no audience participation.

On the other hand, exhibits in the new building will include specimens from all categories of the National Collection. Exhibition areas will be configured to contain artifacts (such as entire air and space vehicles) which will be woven into exhibit Thematic Units by combining these with appropriate audio-visual systems, models, environmental simulations, and audience participative exhibit devices.

Artifact size may range from an air vehicle the size of the gigantic NC-4 to a small but historically significant item. The exhibition function of the proposed building will be a communication process in which the visitor will be given the opportunity to interact with the artifacts and their supporting exhibition systems in such a way that either casual or dedicated visitors may emerge with increased knowledge.

The selection of artifacts for exhibits will be based on inspirational, memorial, or technological value and pertinence to the exhibits. The exhibit themes will encompass titles as diverse as: Air and Space Medicine; Flying in Literature and Legend; World War I Fighters; Air and Space Metallurgy; Manned Lunar Exploration; Biology in Space; Air Traffic Control; Women in Aviation; Understanding Air and Space Science; to name a few.

Included in our plans is an advanced planetarium chamber, or "Spacearium," which will allow the visitor to leave the surface of the earth and journey into space. More importantly, it will be an ideal location to demonstrate the quantum jump of current scientific advances. For instance, the recent discovery of a variety of organic molecules in extragalactic space has startling implications for mankind, as does the discovery of pulsars and quasars. No facility is better equipped for making these understandable to the layman than the modern planetarium chamber. In short, we have the potential to explain the whole relationship of man to his universe.

Closely allied with and supporting this type of exhibit is the planned Historical Research Center, encompassing a library and other facilities necessary for scholarly research. This research will not only look into the past, expanding our knowledge of air and space history, but will probe into the future, examining possibilities for using our new technology for the benefit of all mankind.

Visitors

From the viewpoint of the National Air and Space Museum, dramatic changes have occurred this past decade. The Apollo program has produced new artifacts of historic importance, such as the moon rocks and the Apollo Eleven Command Module. The American public has demonstrated an avid interest in viewing these, partially because of their uniqueness and partially because as taxpayers they financed their acquisition. The Museum, for its part, has an obligation to preserve and display them in such a fashion and location

that the maximum number of visitors to Washington can see them.

Not only are Americans interested in our nation's space progress, but the lunar landings have aroused intense interest throughout the world. During the Bicentennial, many foreign visitors will be especially interested in learning more about this American success story, and should be able to see it properly displayed, in a fashion which makes it clear that we too recognize the importance of our air and space heritage.

It has been estimated that by 1976, five to seven million people will visit Washington, D. C. The majority of these people will seek out the Smithsonian Institution to see the Hope Diamond, the "moon rock," the Star Spangled Banner, and all of the other interesting and magnificent artifacts displayed by the Institution. To these visitors the Smithsonian Institution is one place, on the Mall. To locate the National Air and Space Museum anywhere else but the Mall would be a disservice to our millions of visitors. By the same token, the new museum should create no added problems with regard to people or automobile congestion. The visitor comes to the Mall to the Smithsonian, and will continue to do so with or without the new National Air and Space Museum. What will change is simply the quality of what he sees, a steel shed or a first class museum.

The new building will also provide an additional parking facility for over 500 automobiles. This coupled with plans for the Visitor's Center parking, the use of Park Service Tourmobiles, the Metro System, fringe parking, and other planned visitor parking will

contribute much to reducing automobile congestion.

Bicentennial Celebration

The President, in his Washington Bicentennial Message, stated:

"The central challenge of our Bicentennial preparations is to plan for an observance 'on the move.' ... The common goal to which all subscribe has nowhere been stated better than in the 1970 report of the celebration's official planning and coordinating body, the American Revolution Bicentennial Commission: 'to forge a new national commitment -- a commitment which will unite the nation in purpose and dedication to the advancement of human welfare as we move into Century III of American National Life.

"We can best forge such a spirit, the Commission went on to recommend, by approaching the Bicentennial as an occasion both for understanding our heritage better and for quickening the progress toward our horizons..."

With that charge the President selected the new National Air and Space Museum as one of the structures needed by July 4, 1976.

And what better place is there to provide millions of visitors with "...understanding our heritage" or to "...quicken the progress toward our horizons..."

What better place to accomplish this than a museum dedicated to our air and space heritage. Air and space science and technology are areas in which our nation has always excelled, and a part of our history which we should emphasize.

This new building can serve to educate, to entertain, to inspire. It can be the most exciting museum in the world. With adequate support in FY 1973, it can be a reality in 1976.

ACQUISITION OF PLANETARIUM EQUIPMENT

Senator BIBLE. Last November the committee approved your request to acquire planetarium equipment. Have you been able to do this yet?

Mr. COLLINS. Yes; we have, Mr. Chairman. We are making modifications in our steel shed along Independence Avenue to put up a 30-foot aluminum dome inside in which we will have various items of projection equipment. We are proceeding nicely with this program. We are calling it our experimentarium. We are using it as a testing ground for putting together a larger planetarium which we hope to put inside a new building.

PLANNED AIR AND SPACE EXHIBITS

Senator BIBLE. Do you have a list of exhibits that you would place within your National Air and Space Museum? I recognize that you have many of them in the Smithsonian now. Do you have a total list of exhibits that are going to the National Air and Space Museum?

Mr. COLLINS. Yes; we have a list of approximately 50 of them, I would be happy to put them in the record.

Senator BIBLE. Yes.

(The information follows:)

EXHIBIT THEMATIC UNITS PLANNED FOR
NATIONAL AIR AND SPACE MUSEUM

Multi-Media Shows; Astronomy; Astrophysics
Hall of Advanced Concepts
Understanding Air & Space Technology
Flight Instrumentation
Ground Testing & Flight Testing
Navigation Thru Air & Space
Guidance and Control
Avionics
Air Traffic Control and Airports
Manufacturing Techniques for Air & Space
Hall of Flight Propulsion
The X Airplanes
Do-It-Yourself Airplanes
Early Birds
Barnstorming, Record Setting & Stunt Flying
Rotary Wing Aircraft
Modern Military Jets
World War II
Military Aviation Between the Wars
World War I
V/TOL's and V/STOL's
Cargo by Air
Personal Aircraft
Modern Air Transportation
Early Air Transportation
Successes or Failures
Flying in Literature, Legend, Song and the Theater
Lighter than Air
Women in Aviation
Photography & Mapping
Lobby, Wright Memorial, Hall of Fame, & Summary Exhibit
Earthbound Benefits of Flight
Aeronautical & Space Art
Early Rocketry & Rocket Propulsion
Early Space History
Applications Satellites
Unmanned Satellites
Interplanetary Flight and Exploration
Flight to the Moon
Skylab and Space Stations
Space Shuttle
Air and Space Medicine
Flight in Nature
Weather and the Atmosphere
The Space Environment
Planetary Environments
Cosmology & Cosmography
The Solar System
Materials of Air & Space

EXHIBIT OF SPACE VEHICLES

Senator BIBLE. How about your spaceships?

Mr. COLLINS. We have John Glenn's spacecraft and a sampling of the Gemini, the most popular one being Ed White's.

Senator BIBLE. Are they going to put the one that you were up there following around in?

Mr. COLLINS. Yes, sir; we have that as well. Then we have one of the lunar landers, one of the spacecraft that NASA did not fly, but one that is capable of flying. This is a great thing, 30-some odd feet across, shaped like a spider. This makes a very impressive exhibit and it is one of the most popular things we have in our collection.

Senator BIBLE. I know how popular it is from the people that come in to my office to tell me about it. What is the square foot requirement of your National Air and Space Museum?

Mr. COLLINS. In our new building design we are projecting usable exhibit square footage of 215,000 square feet, gross square footage would be, of course, considerably more than that, because we have to add parking facilities, research facilities, and library.

Senator BIBLE. I am talking about the building itself.

Mr. COLLINS. That would be a gross square footage of 570,000 square feet.

Senator BIBLE. What height does this go to?

Mr. COLLINS. The overall height is 82½ feet, sir.

STATUS OF PROJECT

Senator BIBLE. What is the status of your work on the museum? Give me a status report.

Mr. COLLINS. Last year, as you know, \$1.9 million was appropriated for architect and engineering planning fees. We are working with the GSA to get the necessary approval from the National Capital Planning Commission and the Commission of Fine Arts. In both cases we have conceptual approval of the design. Our architect is from the firm of Hellmuth, Obata, and Kassabaum from St. Louis, the architects who did the previous work and because of this strong background Mr. Obata is aware of our needs and I think all in all the work is progressing nicely. GSA has been quite helpful and we have a construction manager selected. In the event we do get the \$40 million, we are ready to roll.

Senator BIBLE. This is a completely budgeted item?

Mr. COLLINS. Yes, sir.

Senator BIBLE. Will that be the total cost of the National Air and Space Museum?

Mr. COLLINS. Yes, sir; \$41.9 million, counting the fiscal 1972 appropriation.

Senator BIBLE. And you will be ready to go to bid at one date, assuming the funding?

Mr. COLLINS. We can be ready to go out on bid by September.

Senator BIBLE. September of 1972?

Mr. COLLINS. Yes, sir.

Senator BIBLE. What is the estimated construction time as given to you by your architects?

Mr. COLLINS. Two and half years. This would allow us beneficial occupancy by the summer of 1975, which would give us 1 year to prepare the exhibit areas so as to be open to the public by July of 1976.

Senator BIBLE. Well, I have no further questions. I have no problem whatever on the funding. Additionally I have to report to two sons who went to St. Albans and they also suggested that I treat you kindly, which I have.

Mr. COLLINS. You certainly have.

Senator BIBLE. All right, Mr. Collins. You have been a great credit to the country and I compliment you. I am coming down to see you soon.

Mr. COLLINS. Please do, Mr. Chairman, we have an interesting exhibit on right now.

Senator BIBLE. I will try to get down to see it.

SCIENCE INFORMATION EXCHANGE

Dr. Ripley, do we have any others in the same general classification that you might suggest that I might call on?

Dr. RIPLEY. Perhaps you might like to hear Dr. Hersey in connection with the Smithsonian problems on the Science Information Exchange.

Senator BIBLE. Yes; I only have a few questions on that.

We will place in the record at this point, Mr. Reporter, the justification for a request of \$1.6 million for the Science Information Exchange.

This is \$300,000 more than provided during the current year but will be the same as the current year if the supplemental estimate on which we already have heard testimony is allowed. That is a \$300,000 supplemental.

(The justification follows:)

SCIENCE INFORMATION EXCHANGE

1971 Appropriation.....	0 ^{1/}
1972 Appropriation.....	\$1,300,000 ^{2/}
1973 Estimate.....	\$1,600,000

The Smithsonian Science Information Exchange (SSIE), in operation for 22 years, has been managed by the Smithsonian Institution since 1953 at the request of, and in behalf of, the federal agencies. As of July 1, 1971, the Smithsonian took over the funding of the Exchange for the development and maintenance of the data base by obtaining a direct appropriation. Prior to that time funds were provided by the National Science Foundation. In order to provide an efficient mechanism for the operation of the Exchange, it was incorporated as a non-profit Corporation in the District of Columbia in mid-June 1971. Incorporation was determined to be the most effective means of operating the Exchange in view of the complexities of charging users fees for services, the income from which makes up the balance of the funds required for overall operation of the Exchange, and for other reasons.

Management of the Exchange is accomplished by means of a Board of Directors and an Advisory Council. The latter is made up of representatives from federal agencies, industry, private foundations, fund raising agencies and universities, and represent those groups which are the prime users of SSIE's services. The Council is responsible for advising the Board of Directors on (a) the value and effectiveness of the Exchange, and (b) potential improvements that might be made in the Exchange to improve both input and output services. This Council in August 1971 reaffirmed the value and usefulness of SSIE.

The SSIE data bank annually receives and processes about 100,000 one-page records (2.5 to 3 million data elements) of research planned or in progress. About 80 percent of the input comes from federal agencies and 20 percent comes from private foundations, universities, state and local governments, industry, and some foreign sources. From this data bank, SSIE answers questions from the national science community about who is currently working on what project(s), where, when, and with whose support. The purpose of this national service is to help investigators and administrators avoid unwarranted duplication and unnecessary overlap of complex programs and to assist in more efficient planning and management of research projects and programs. It is one to three years from the time a project is planned and started until the time it is completed and reported. Efficient planning and management requires the earliest information about what others are doing.

For FY 1973 the Exchange is requesting an appropriation of \$1,600,000 (see Table I) to cover the cost of collecting and processing input into the data bank. Since December 1968, non-federal users have paid for retrieving, synthesizing, and packaging requested information. All users have paid for such services since July 1969. Table II shows income by type of use and user for fiscal years 1970 and 1971 as well as projections for FY 1972. Charges are reviewed regularly and adjusted as necessary. The Exchange was funded in FY 1971 at an annual level of \$1,680,000 by the National Science Foundation. The FY 1972 appropriation was approved at \$1,300,000 but \$1,600,000 is required in FY 1972 to cover the basic cost of collecting, processing, and

^{1/} Funded by contract with the National Science Foundation for the 10-month SIE fiscal year 1971 at an equivalent annual level of \$1,680,000.

^{2/} Excludes \$300,000 proposed for supplemental.

storage of data. An additional \$300,000 is being sought in a supplemental appropriation in order for the Exchange to retain operational capability after May 1972. It will also fund a user study recommended by the General Accounting Office and the Office of Management and Budget on the future role of the Exchange in serving a changing science community.

Table III presents revenue, expenditure, and related data from FY 1966* up through and including projections for FY 1973. Comparison of the data for those two years reveals the following:

- Although staff size was reduced by 48 percent over the period, the rising cost of salaries and benefits result in a projected FY 1973 dollar outlay for personnel 8 percent greater than the actual personnel costs incurred in FY 1966.
- The staff reduction over a period of increasing input processing volume was partially offset by increasing technological sophistication, an increase reflected by the 40 percent rise in projected outlays for ADP equipment. The balance of the effect of the staff reduction was absorbed by an erosion of the quality of the SSIE data base.
- As a result of significant reductions in staff size and operating expenses other than those related to ADP equipment, costs projected for FY 1973 exceed those incurred in FY 1966 by only 8 percent.
- Funding at a level of \$1,600,000 for FY 1973 represents a decrease in federal support of 16 percent from the FY 1966 level.
- Revenues from SSIE sales are projected at \$425,000 for FY 1973, an increase of 32 percent over the current year. It is not reasonable to anticipate a greater rate of growth which might provide some funds to offset input costs.

No additional funding over the FY 1972 level is requested, assuming the supplemental appropriation for \$300,000 is approved. The amount of \$1,600,000 represents the minimal amount required to maintain data flow into the SSIE system and the future development of the data base manipulation techniques necessary to insure a system which will be responsive to the needs of SSIE users.

Maintenance of a national data bank of ongoing research activity requires a clearly identifiable level of funding support below which it becomes no longer practical to attempt to update the data base. This minimum level of operations is constrained by the necessity for technical skills in a variety of scientific disciplines to evaluate and process input data, the requirements for maintenance and update of the automated data entry, search and retrieval system, and certain minimum, fixed operating expenses. Where inadequate staff support is available for processing incoming material, significant delays occur in entering administrative and subject indexing data into the computer. Such data cannot be recovered and included in material sold to users, thus decreasing the value of the material provided. Considerable man-hours are required to work out and maintain effective input as government reorganization and turnover of personnel necessitate repeated contacts with agency representatives. SSIE will not be able to maintain the data bank without the supplemental \$300,000 requested in FY 1972, or without the \$1,600,000 requested in the FY 1973 budget.

*FY 1966 was selected as a base year in that it covered a period of peak activity, i.e. activity at a maximum level above that required for sustenance of basic operations.

SSIE will continue to develop improvements in both the input process, storage and search capabilities of the system. New computer system improvements are being considered and will be developed to provide for more efficient operation within the confines of the proposed budget.

With regard to increased input the Exchange notes two new sources. Input from state governments will be actively sought following pilot projects developed with the help of the Office of Intergovernmental Science Programs at NSF and the National League of Cities. These projects are both geared to improving input and use of SSIE by state and local governments. Contact has already been made with all state governments to familiarize them with SSIE and its services. In addition, knowing the importance of international research on such broad problems as environment and other urban problems, SSIE expects to further input of foreign research by reciprocal agreements with various foreign research information programs already established for ongoing research. Input from these programs is expected to result ultimately in an increase of some 15,000 projects. The ability to absorb these additional workloads will be dependent on improved efficiencies developed within the system and the availability of some supporting funds from the sponsoring agency.

About 65 percent of the output service goes to the federal agencies and an additional 20 percent to their grantees and contractors. Their requests range from retrieval of records (at one dollar each) to the preparation of printed annual catalogs of 1,500 pages (at \$25,000) describing the current national research effort, for example in water resources, marine sciences and environmental quality. Table IV shows input and output volume statistics for FY 1971. Table V lists catalogs and other publications prepared by the Exchange. The total revenue from all output products in FY 1972 is projected at \$322,000. More rapid increases in revenues from user charges have been difficult due to an almost constant federal R&D budget in spite of rising research costs. Under the circumstances early and adequate information is more essential than ever to efficient planning and management in research as well as in any other enterprise.

The SSIE data bank is the only one of its scope and size in the world that deals with information about current research activities applicable to planning and management purposes. It is the only source of coherent and comprehensive information that can quickly define and describe the broad multidisciplinary and multi-agency (government and private) programs of immediate national importance.

TABLE I
SMITHSONIAN SCIENCE INFORMATION EXCHANGE, INC.
PROPOSED BUDGET FY 1973

	<u>TOTAL COST</u>	<u>DATA BANK COST*</u> (Federally Appropriated Funds)	<u>OUTPUT COST</u> (User Charges and Other Income)
Personnel	\$1,470,642	\$1,163,800	\$306,842
Salaries	1,301,453	1,029,911	271,542
Benefits	169,189	133,889	35,300
Contract Services			
Travel	7,000	5,600	1,400
Transportation of Things	2,000	1,600	400
Rents			
Telephone	9,000	7,020	1,980
IBM	240,038	187,230	52,808
Xerox	9,000	7,200	1,800
Building	98,500	76,830	21,670
Other	8,000	6,400	1,600
Printing	4,000	3,200	800
Other Services			
Equipment Maintenance	4,000	3,120	880
Other	20,000	16,000	4,000
Supplies	15,000	12,000	3,000
Acquisition of Capital			
Equipment	12,820	10,000	2,820
TOTAL	<u>\$1,900,000</u>	<u>\$1,500,000</u>	<u>\$400,000</u>
SI Services	125,000	100,000	25,000
GRAND TOTAL	<u>\$2,025,000</u>	<u>\$1,600,000</u>	<u>\$425,000</u>

*Previous year (FY 1972) input costs of \$1,600,000 were met by \$1,300,000 in Federally Appropriated Funds and one-time funds of \$300,000 from a supplemental appropriation.

TABLE II

Income for SSIE Services
by Type of Use and User

Government Fiscal Years (1 July - 30 June)

Fiscal Year	Months	Federal Users			Non-Federal Users			Grand Total
		User Charges	Contract Income	Total	User Charges	Contract Income	Total	
1970	12	61,733	70,473	132,206	68,538	--	68,538	200,744
1971	12	80,033	77,610	157,643	73,438	--	73,438	231,081
1972	6*	43,386	64,325	107,711	57,300	11,700	69,000	176,711
1972	12**	92,095	104,325	196,420	101,880	23,700	125,580	322,000

*First 6 months of FY 1972

**Currently projected

TABLE III
SSIE Revenues & Expenditures
(1966 - 1972)

SSIE Fiscal Year	Staff Size		Staff Salaries and Benefits		ADP Equipment Expense		Other Operations Expense	
	Actual	% Increase (Decrease)	Actual (1,000)	% Increase (Decrease)	Actual (1,000)	% Increase (Decrease)	Actual (1,000)	% Increase (Decrease)
1966 (Base Year)	164	--	1,364	--	171	--	331	--
1967	155	(6%)	1,380	1%	178	4%	313	(5%)
1968	139	(15%)	1,427	5%	217	27%	331	-0-
1969	134	(18%)	1,330	(2%)	246	44%	382	15%
1970	88	(46%)	1,396	2%	254	49%	368	11%
1971*	87	(47%)	1,363	-0-	250	46%	309	(7%)
1972**	87	(47%)	1,439	5%	258	51%	301	(9%)
1973**	85	(48%)	1,470	8%	240	40%	315	(5%)

SSIE Fiscal Year	Total Cost of Operations		Direct Federal Support		SIE Revenues		Input Processing Volume	
	Actual (1,000)	% Increase (Decrease)	Actual (1,000)	% Increase (Decrease)	Actual (1,000)	% Increase (Decrease)	Actual	% Increase (Decrease)
1966 (Base Year)	1,866	--	1,902	--			75,800	--
1967	1,871	-0-	1,850	(3%)			84,400	12%
1968	1,976	6%	2,000	5%			95,700	26%
1969	1,958	5%	1,800	(5%)	173	--	91,200	20%
1970	2,018	8%	1,707	(10%)	212	---***	88,000	16%
1971*	1,921	3%	1,680	(12%)	231	9%	90,000	19%
1972**	1,922	3%	1,300	(32%)	322	52%	94,000	24%
1973**	2,025	8%	1,600	(16%)	425	100%	94,000	24%

* 10 month fiscal year projected on a 12 month basis

** Projection based on current minimum requirements

*** 1970 was selected as a base year for comparison of revenues as cost recovery program covered only a portion of FY 1969

TABLE IV
SERVICES PROVIDED BY THE SSIE IN FY 1971

Type of Service - Input	Source and % of Total Input Documents into the Data Base		
	Federal	Non-Federal	Total Number of Projects Registered
Input of research project resumes into data bank including scientific, administrative indexing.	80%	20%	96,601
Type of Service - Output	Number of Requests	Number of Requests	Total Income from Service
Searches on data base for scientific and technical information and by administrative information such as supporting agency, location of work, etc.	790	990	\$69,811
Preparation of computer printouts and tables of data from information in SSIE data base.	6	2	\$1,351
Large administrative and/or subject requests for which no standard price exists and which involve special handling.	31	30	\$55,547
Requests for searches of data base in which all projects attributed to a given research investigator are retrieved.	3,780	388	\$8,445
Subject searches of SSIE data base to retrieve information on ongoing research on a regularly scheduled basis (selective dissemination based on user profiles).	97	109	\$8,701

Type of Service - Output	Number of Requests	Number of Requests	Total Income from Service
Distribution of Notices of Research Project documents on a regular basis to selected agencies supporting research (almost always involves their own research program).	33,041	0	\$3,304
Retrieval of Notices of Research Project documents from data base by SSIE accession number or supporting agency contract or grant number.	1,077	214	\$1,358
Subject or administrative searches of the archival files of SSIE data base. Covers the period 1949-1969.	14	20	\$4,954
Contracts for Research Catalogs.	6		\$77,610
TOTALS	38,842	1,753	\$231,081

TABLE V

List of Catalogs and Other Publications Relating to Ongoing Research
Prepared by the Smithsonian Science Information Exchange

1. "Environmental Research Catalog" - FY 1971. Prepared for the Environmental Protection Agency, Washington, D.C., 1972 (In press).
2. "Water Resources Research Catalog". Prepared in 1965, 1966, 1967, 1968, 1969, 1970 (1971 in preparation) for Office of Water Resources Research, Department of the Interior. Superintendent of Documents, Government Printing Office, Washington, D.C.
3. "Water Resources Thesaurus". Prepared 1966 - revised 1971 for Office of Water Resources Research, Department of the Interior. Superintendent of Documents, Government Printing Office, Washington, D.C.
4. "Marine Research" - FY 1968. (Prepared for Executive Office of the President, National Council on Marine Resources and Engineering Development) Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402, 1970.
5. "Outdoor Recreation Research". Prepared in 1966, 1967, 1968, 1969, 1970 (Prepared for Bureau of Outdoor Recreation, Department of the Interior) Superintendent of Documents, Government Printing Office, Washington, D.C.
6. "Current Population Research 1966, 1967, 1968, 1969". (Prepared annually for National Institute of Child Health and Human Development, National Institutes of Health, HEW, Bethesda, Maryland 20014). Published by U. S. Department of Health, Education and Welfare.
7. "Recent Research in Public Administration - A Reference 1969". (Prepared for Office of Metropolitan Development, U. S. Department of Housing and Urban Development, Washington, D.C. 20410). Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402, 1969.
8. "Recent Research in Intergovernmental Relations 1968". (Prepared for Office of Metropolitan Development, U. S. Department of Housing and Urban Development, Washington, D.C. 20410). Government Printing Office, 1969.
9. "Recent Research in Planning 1968". (Prepared for Office of Governmental Relations and Planning Assistance, U. S. Department of Housing and Urban Development, Washington, D.C. 20410). Government Printing Office, 1969.
10. "Research on U. S. International Trade". (Prepared for Export Strategy Staff, U. S. Department of Commerce, Washington, D.C.). Government Printing Office, 1970.
11. "Neurological Disease and Blindness Catalog 1969". (Prepared for National Institute of Neurological Disease and Blindness, National Institutes of Health, HEW, Bethesda, Maryland 20014).

12. "Sustaining University Program, NASA". (Prepared in 1969 and 1970 for Office of University Affairs, National Aeronautics and Space Administration, Washington, D.C. 20546). Government Printing Office, 1970, 1971.
13. "Catalog of Federally Funded Housing and Building Research and Technology". (Prepared for Office of Urban Technology Research, U. S. Department of Housing and Urban Development, Washington, D.C. 20410). Superintendent of Documents, U. S. Government Printing Office, Washington, D.C., 1970.
14. "Food Distribution Research Projects in Progress 1969". Food Distribution Research Society, Hyattsville, Maryland, 1970.
15. "Dental Caries Research FY 1969". (Prepared for National Institute of Dental Research, National Institutes of Health, Department of Health, Education and Welfare, Washington, D.C.). Superintendent of Documents, U. S. Government Printing Office, Washington, D.C., 1971.
16. "Dental Research in U.S. and Canada". Prepared in 1970 (1971 in preparation) for National Institute of Dental Research, NIH, Bethesda, Maryland, 20014. Superintendent of Documents, U. S. Government Printing Office, Washington, D.C., 1971.
17. "Dental Health" - FY 1970. Prepared for Division of Dental Health, NIH, Bethesda, Maryland, 20014. Superintendent of Documents, U. S. Government Printing Office, Washington, D.C., 1971.
18. "Pesticides Research -- Water" - 1971. (In preparation) for Environmental Protection Agency, Washington, D.C.

EXCHANGE FLEXIBILITY

Senator BIBLE. You indicate that the Science Information Exchange has been incorporated as a nonprofit corporation in the District of Columbia. What advantage is there to do this?

Dr. HERSEY. There are several. First, I think the flexibility of the Exchange is considerably enhanced because of the very nature of the increase and decrease of the workloads. Rather than maintaining large staffs of people on the payroll, it makes it possible for us to add or reduce staff during the year as the workload fluctuates. For the past several years it has been going on a steadily rising rate. We depend on not just Federal funds but a combination of Federal appropriated funds as well as other income. It allows us to carry out the mission a little more effectively.

RECEIPTS

Senator BIBLE. How much has the Science Information Exchange realized from sales during this fiscal year?

Dr. HERSEY. Well, as of the 31st of January it had received \$215,848.

Senator BIBLE. That is from what period to what period?

Dr. HERSEY. July 1 to the 31st of January.

EFFECT OF DENIAL OF SUPPLEMENTAL REQUEST

Senator BIBLE. With respect to your supplemental estimates, what will be the effect of your fiscal year 1973 operations should the supplemental allotment not be granted? You are only going to have, I would think, that last 2 months remaining by the time we finish that supplemental because we won't get to a mark up on that until April. In fact, it might not even be 2 months. It might be 6 weeks. What effect will that have on you?

Dr. HERSEY. What we have done is that the Smithsonian, rather than have us cut back to a 3¾-day workweek as of the time we had our hearings here before you, so as not to overspend our present Federal appropriation of \$1.3 million, is making a loan to us from private funds. This would allow us to continue to work without overspending the federally appropriated portions of the funds pending a determination by the Congress as to whether or not we would get the supplemental appropriation.

Senator BIBLE. Do all users of this Science Information Exchange pay the same rates for the data they request?

Dr. HERSEY. Yes, Mr. Chairman.

REPORT OF CONTROLLER GENERAL

Senator BIBLE. Are you aware of the Controller General's report to the Congress? It is their report of March 1, 1972, I am sure you are familiar with it, aren't you?

Dr. HERSEY. Yes, sir.

Senator BIBLE. I think there are a number of statements that require comment from you. First, the report tells why the review was made, and then come the findings and conclusions. Under the first conclusion it is said, "Many government agencies are not using the

Science Information Exchange because they claim its data bank is not current or complete." Is that true or false?

Dr. HERSEY. That is true insofar as their surveys indicate, and I think it is true in terms of the results obtained from other surveys previously. Many agencies give as a reason for not using the Exchange the fact that it is not fully complete in its coverage and this is indeed a true fact. It is not 100 percent complete.

Senator BIBLE. Is there a percentage of it that is complete? How do you measure that?

Dr. HERSEY. We have no real way of knowing whether an agency's total program is registered with us. We generally determine from them verbally whether or not we have their total program. But because many of the agencies are organized into individual bureaus, it is impossible to get a full reading from them as to whether or not all of the bureaus within a given agency are submitting their material. All of the input to the Exchange has been on a voluntary basis as you know. There is no mandatory requirement for Federal agencies to register with us.

Senator BIBLE. I understand that.

Dr. HERSEY. This is one of the things that the study will bring to light.

SERVICE CHARGES

Senator BIBLE. They say in the same paragraph:

A significant decline in the use of the Exchange between 1968 and 1970 can be attributed in part to the charges levied for carrying out information searches of the Exchange's files. Also, agencies used the Exchange less frequently because its information, being incomplete and obsolete, was of limited use to them.

Do you have a comment about that?

Dr. HERSEY. Yes, they modified this statement from their draft report and that is along the lines that usage has increased since we began charges for services and we began providing data to them to show that the Federal increase has been considerable during this period of time. It has been educational and people readjusted their budget to make use of the Exchange.

Senator BIBLE. Does that seem to indicate there will be a greater use of it in the future and more fees coming in, in the future?

Dr. HERSEY. I believe that will be the case, Mr. Chairman.

OFFICE OF MANAGEMENT AND BUDGET STUDY OF EXCHANGE ROLE

Senator BIBLE. Well, we will let time judge that for us. It says:

Agencies and departments commenting on this report agreed that the Exchange would play a more important coordinating role if the agencies were required to provide the Exchange with information on their research projects. Agencies which had not submitted complete and timely information generally indicated that such a requirement was desirable.

The Office of Management and Budget agreed to study the role of the Exchange. On the basis of findings of the study to be made under the sponsorship of the Smithsonian Institution, the Office will decide whether to continue the Exchange and whether to require agencies to report their research activities to the Exchange.

Do you have any comment on that? There seems to be underlying that statement the possibility that your Exchange will be discontinued.

Dr. HERSEY. I think that is, of course, always a possibility. However, the Exchange has been studied at least six times in the past 10 years and by and large the results have indicated it should be continued and it is fulfilling a useful purpose. What I am hoping is that the proposed study will determine if the biggest objection to the use of the Exchange by the agencies is a lack of completeness. If we can persuade either the Office of Management and Budget or the Office of the President to make input mandatory, then the coverage of the Exchange will be more complete and therefore should increase its value and effectiveness for the Federal Government.

Dr. RIPLEY. Mr. Chairman, may I make an addition to this statement?

Senator BIBLE. Yes.

Dr. RIPLEY. I would like to say that it is in the nature of humanity to wish to have complete information on any subject and it is also in the nature of humanity to wish to arrange to do it within your own bureau. The fact that the Smithsonian has operated the Exchange for 20 years as a public service has continually rankled those aspects of humanity which are involved in having other bureaus. So I am sure you will find that should the SIE become extinct there will be two or three other bureaus who will spring into action with requests for an SIE under their own management. In fact, there are related operations already within other budgets. I would suggest, if I may, that a statement by this committee in its report would be most salutary in getting broader contributions from these agencies. My sole argument in favor of SIE has been that it exists and has been supported for many years. There is nothing like a data bank that exists. It is three times as hard to start a new one when you don't have a base. It seems to me that the U.S. Government is very well advised to continue to do something when they already have it rather than to get rid of it because of those strange components of human nature that I referred to.

ADDITIONAL CONTRACTUAL STUDY

Senator BIBLE. Reading on into this report, the OMB, if I understand it correctly, advised that it was agreed that a further study of the Exchange would be appropriate and the Smithsonian Institution agreed to contract for such a study. Have you entered into a contract for the study referred to in this report?

Dr. RIPLEY. We have taken this under consideration. We have not entered into a contract yet.

Dr. HERSEY. The funds for the study are requested in our supplemental appropriation request.

Senator BIBLE. How expensive is it?

Dr. HERSEY. Approximately \$50,000 was the amount requested.

Senator BIBLE. Will that then resolve these problems to which you have been directing yourself?

Dr. RIPLEY. We have enjoyed being studied to death. We will enjoy another study.

Senator BIBLE. Well, everybody studies when they are in trouble. We study ourselves when we are in trouble so it is human nature. All I am trying to find out, if you have another \$50,000 study, will that end the studies?

Dr. RIPLEY. We hope so. GAO believes so.

Senator BIBLE. All right, we will see. I have no further questions of you.

Dr. HERSEY. Thank you, Mr. Chairman.

STATEMENT OF DR. RIPLEY

Senator BIBLE. Who testifies on the bicentennial park planning.

Dr. RIPLEY. We have Mr. Blitzer. Dr. Cowan is here for natural history in case you would like to go into that.

Senator BIBLE. Well, that interrelates with other questions here as we go along, so I don't know if there is anything further to be gained by trying to isolate the questions that appear to be very minimal. So we will go back to highlighting of your statement, which will be printed in full in the record.

(The statement follows:)

Mr. Chairman and Members of the Committee:

It is a pleasure to be here today to review the Smithsonian Institution's program plans and to share with you some of the progress and notable accomplishments we have had over the past year. Our many public services in the form of basic research, exhibitions, lectures, publications, performing arts, and both general and specialized education have been made possible by Congressional support of our work. We are deeply appreciative of this interest.

Notable Events of the Past Year

Our 125th year has been a very good one, although the employment control has slowed our efforts to develop the levels of support staffing approved in the FY 1972 appropriation. Primarily this control has had an adverse effect on the National Museum of Natural History, the National Zoological Park and the Buildings Management Department where there were major employment increases allowed in the current budget year. This effort continues to have our high priority.

With so many notable events of the past year to report, I must be selective in the interest of conserving time today. A fuller report appears in the Smithsonian Year. Those events I would like to mention vividly illustrate the scope of our present activities. They serve to document at least in small measure our accomplishments with the resources you have provided. They also show our strong efforts to obtain financial and other support for our work from private sources.

--Our visitor attendance in FY 1971 to buildings on and in the vicinity of the Mall was 13,800,000, an increase of about 200,000 over the previous year. An additional 5,000,000

persons visited the National Zoological Park and about 50,000 came to the Anacostia Neighborhood Museum. This makes a grand total of almost 20 million persons who used the Institution's educational and cultural resources.

--The Smithsonian's professional staff, alone and in collaboration with others, produced almost 1,000 research, exhibition, and other scholarly publications.

--Thanks to initial funding in this year's budget, the Smithsonian Astrophysical Observatory, in cooperation with the University of Arizona, is developing a multi-mirror telescope. This will be the world's largest infrared and third largest optical telescope.

--We are well along in completing the redesign for the National Air and Space Museum. The President has approved our requesting construction funds in the FY 1973 appropriation. Air and space exhibits, which have been scattered in several buildings, will be consolidated in a new and modern structure on Independence Avenue between 4th and 7th Streets. This museum will display the progress that America has made in aeronautical and space science during the past 200 years. Opening in 1976, as a major feature of Washington's Bicentennial celebration, this center of exhibition, exposition, and education will be visited by an estimated six million visitors annually. A taste of the kind of exciting exhibits being planned for this museum is the ballooning exhibit which opened two weeks ago, visited by several members of the Congress, and the recreation of a World War I front line fighter airfield to be opened on March 31.

--Activity at the Harbor Branch Foundation Laboratory at Fort Pierce, Florida, intensified. This is a new marine research

facility, affiliated with the Smithsonian, on the Indian River Inland Waterway. The Johnson-Sea-Link, a 9-ton acrylic and aluminum research submersible capable of extended underwater observations at depths up to 1,200 feet, was constructed with private funds and donated for use. A former Coast Guard cutter is being refitted for oceanographic work and as a tender for the submersible. In addition, a laboratory building has been completed to support scientific investigations related to the underwater studies. Support for this program has been from private sources.

--Present land acquisition goals for the Chesapeake Bay Center for Environmental Studies have been almost realized. Negotiations are underway for two additional tracts to be purchased in 1972. This will bring the total land holding of the Center to 2,500 acres. During the coming year, scientists from four bureaus of the Smithsonian and three local universities will be using this splendid natural area for environmental research on the Bay and adjoining lands.

--The Carnegie Corporation agreed to give the Carnegie Mansion on Fifth Avenue at 90th Street in New York City to the Smithsonian for use of the Cooper-Hewitt Museum of Decorative Arts and Design. A \$500,000 grant was received from the Mellon Foundation towards renovation of the Mansion.

--At long last the Renwick Gallery's restoration has been nearly completed and the building was opened to the public in late January 1972. Originally opened in 1874, as the original Corcoran Gallery, situated opposite the White House and adjoining the Blair House, this Gallery should be an extraordinarily popular museum. Some 50,000 persons have visited the building in the first six weeks it has been opened. Under the

administration of the National Collection of Fine Arts, it will be used to display changing exhibitions in the fine arts, the decorative arts, and in folk and cultural design.

--As a result of substantial funding for the National Museum Act this year we have been able to respond with financial support to 18 significant projects in museum training, conservation, curriculum development, and museum administration. Over 100 requests for funds, exceeding \$2,000,000, have been received thus far this year.

--I am very happy to tell you that Mr. Hirshhorn is preparing to add some 300 additional works of art to his original gift to the Smithsonian. These works, which have been appraised at a total value of \$7,500,000, were chosen by the Museum director from the collections of Mr. Hirshhorn and the Hirshhorn Foundation on the grounds that they would add enormously to the coverage and the brilliance of the opening exhibit of the Joseph H. Hirshhorn Museum and Sculpture Garden. The willingness to commit these additional works to us now, under the same terms as the 1966 conditional gift, will make it possible for the Museum to proceed with plans for that exhibition and for its catalog.

--The Festival of American Folklife, our fifth on the Mall, was even more successful than its predecessors. About 800,000 persons attended the five-day event which included a special pavilion featuring the State of Ohio, the participation of Indians of the Northwest Coast and Alaskan Eskimos, and trade union exhibits, as well as the usual wide variety of folk arts and traditional music and dance.

--The Anacostia Neighborhood Museum began work on a novel urban studies project funded by generous grants from the

Carnegie Corporation, the Cafritz Foundation, and the Department of Housing and Urban Development. One of the results of this support has been an exhibit of Anacostia's history from 1608 to 1945 which opened at the Museum two weeks ago. Entitled "The Evolution of a Community", this exhibit portrays Anacostia's diversity and heritage from the views of its past and present residents.

--The first television documentary under the series known as Smithsonian Adventure, produced in collaboration with the Columbia Broadcasting System, was broadcast to a prime-time Sunday night national audience. It concerned the excavations conducted by Dr. Iris Love on the Island of Knidos and her search for Praxiteles' renowned statue of Aphrodite. The documentary was favorably reviewed by Life magazine and produced a great volume of correspondence from students and the general public interested in archeology. The second film in the series, concerning the first voyage down the Colorado River by Major John Wesley Powell, who received Smithsonian support for various of his expeditions; is soon to be broadcast.

--The Smithsonian Magazine continues to do well in promoting the educational efforts of the Institution. Subscriptions are now over 300,000 and are projected at 315,000 for June 30, 1972, compared with 248,000 a year earlier. It is currently anticipated that the magazine will break-even financially this fiscal year - a remarkable performance for this two-year old privately funded venture.

Budget Requests for Fiscal Year 1973

I would like to turn now to our budget requests for the coming fiscal year. Before summarizing these, it might be useful to mention very quickly some of our major objectives for the next several years. These are the goals that unify the Smithsonian and provide the context for the budgetary requirements of over 40 line items, including museums, galleries, research laboratories, a zoo, and supporting organization units.

Briefly stated, our program objectives are the following:

--To nurture the basic scholarly program from which flows publications, lectures, exhibitions, symposia, and other services.

This goal can be accomplished by providing our scientists and Historians with the resources that facilitate productive research -- technicians and research assistants, library materials, electronic data processing, advanced scientific equipment, and funds for laboratory supplies and field research.

--To strengthen the Institution's educational role. Our efforts will take the form of new and exciting exhibits for the general public. Also guided tours and workshops will be arranged for elementary and secondary school children. We will prepare and distribute traveling exhibits and home and classroom-use publications and audio-visual materials.

And we will offer training opportunities for students and others to use our collections, library, and research facilities under the guidance and supervision of our professional staff.

--To contribute to the reappraisal of the American Experience by portraying our Nation's course over the past 200 years and by suggesting paths for our continued national development. Our plans and preparations for the Bicentennial are

proceeding. They have met with an enthusiastic response from the American Revolution Bicentennial Commission, the Bicentennial Coordination Center, and the White House. As stated in the recent plan submitted to the President, Washington Bicentennial 1976 The Living City, "the Smithsonian Institution will play a major role in every aspect of Washington's Bicentennial celebration." Through publications, traveling exhibits, and advice and assistance to state and local groups, we believe that our contributions also will be national and international in scope.

--To improve man's understanding of the physical and natural environment upon which human society depends. Our coordinated environmental research program is enabling our science bureaus for the first time to monitor, assemble, and analyze biological and physical data on specific important ecosystems. We hope to develop ways to help predict the consequences of environmental change and, thereby, contribute to the better management of our natural world.

--To respond to the urgent request of the Nation's museums for help in serving several hundred million visitors each year. Through the National Museum Act, we hope to provide improved systems for museum cataloging and access to data, museum laboratory centers, especially for conservation, training of personnel, research in museum techniques, and manuals of instruction.

--To improve the management of scientific and scholarly information and the preservation of the sources of this information. This effort includes the design and application of improved information storage and retrieval systems for collection data, conservation of the National Collections including archival

materials and the preservation, identification, and cataloging of our huge photographic collections for staff and public use.

-----0-----

In total, we are requesting appropriations of \$106,923,000 for FY 1973. These budget requests are presented in four categories:

"Salaries and Expenses," the operating budget of the Smithsonian - \$52,964,000

Science Information Exchange, for maintenance of the data bank - \$1,600,000

Special Foreign Currency Program - \$6,000,000

Construction and restoration and renovation of buildings and facilities - \$46,359,000 (including \$40,000,000 for the National Air and Space Museum).

I would like to highlight these four appropriation accounts.

"Salaries and Expenses" for Regular and Special Programs.

We are asking for a "Salaries and Expenses" increase of \$8,794,000 on an estimated base of \$44,170,000. It is our understanding that both of these estimates will increase as a result of decisions by the Office of Management and Budget on a supplemental appropriation request for FY 1972 and a budgetary amendment for FY 1973. These will provide funds for three recent pay raises affecting General Schedule and Wage employees. In total, these raises will cost the Smithsonian \$1,069,000 this year and \$1,769,000 next year. The current year's costs will be met, at least in part, by Smithsonian funds now held in reserve by the Office of Management and Budget as a result of the employment control.

The requested increase of \$8,794,000 (which includes \$1,082,000 for necessary pay for current staff of which \$410,000 is for the full year cost of the wage pay raise) is distributed as follows:

For the science programs we are seeking an additional \$2,199,000 (on a base of \$15,881,000). This includes \$755,000 for the National Museum of Natural History's research and electronic data processing programs; \$323,000 for the Smithsonian Astrophysical Observatory to continue the fabrication of its multi-mirror telescope; \$477,000 to enable the National Air and Space Museum to step-up restoration, research, and other preparations for a 1976 opening in its new building; and \$644,000 for all other science programs.

In the history and art area, our budget request is for a \$2,298,000 increase (on a base of \$5,615,000), of which the large increment, \$1,413,000, is for the one-time purchase of furnishings and equipment for the Joseph H. Hirshhorn Museum and Sculpture Garden scheduled to open in late 1973; \$304,000 are for the curation of the collections and accession of new objects in the National Museum of History and Technology; and \$581,000 are for our other art and history museums and activities.

In the public service area we are seeking an additional \$245,000 (to our base of \$937,000) of which \$80,000 are for the operating programs of the Anacostia Neighborhood Museum; \$88,000 are for the Folklife and College Theater Festivals and Indian awareness programs of the Division of Performing Arts; and an amount of \$77,000 is for other activities.

The special programs section of the operating budget contains a request for a further \$1,373,000 (on a base of \$2,902,000). This relatively large increase is for activities considered to be of particular importance because they permit many of our bureaus to enlarge and extend their research and public programs. Included in the additional funding we are seeking are \$600,000 for Bicentennial preparations and activities for the celebration of this great national event, including exhibitions, surveys of American art and folk traditions, and outreach activities of our traveling exhibits and Anacostia programs. The special programs request includes \$250,000 for our Major Exhibitions effort which, with funding in the base, will permit us to complete one major new exhibit on the "World of Living Things," produce another "Of the People, By the People, For the People," and plan a third, "The Earthbound Benefits of Flight." An amount of \$400,000 is for the National Museum act to bring this program of museum assistance to the full funding level of \$1,000,000 as authorized by Public Law 91-629. The balance of the special programs request, \$123,000, is for academic and educational programs and research awards.

In a new category in our budget request, documentation and conservation, we are asking for an additional \$597,000 (on a base of \$1,759,000). This new category has been established to emphasize the functions in common of the Smithsonian Libraries and Archives, the Office of the Registrar, the Conservation Analytical Laboratory, and the Photographic Services Division which are so important in preserving, identifying, and cataloging the materials and documents that make up our collections.

For administrative and central support, an increase of \$541,000 (on a base of \$6,530,000) is proposed for the 1973 budget. This increase for central administration and technical services is essential in order to give support to program operations.

And, finally, we are asking for an additional \$1,541,000 (on a base of \$10,546,000) for buildings management. This request includes \$386,000 for necessary pay, \$410,000 for initial services to the Hirshhorn Museum and Sculpture Garden, \$85,000 for Cooper-Hewitt Museum staffing, \$250,000 for utilities and communications, \$220,000 for protection and custodial personnel in our buildings, and \$190,000 for the rental of new space for administrative purposes.

Science Information Exchange

The requested budget of \$1,600,000 for the Smithsonian Science Information Exchange will meet the costs of input, that is, maintaining and developing the data bank of information on research projects which are planned or in progress. The Exchange serves as a national information service to the research community. Users of the Exchange pay for all services they receive. In other words, the costs of output are met by user charges. This income is estimated at about \$425,000 in FY 1973 as compared with some \$325,000 in the current year. Use of the Exchange is on the upswing. Numerous studies have concluded that it is a valuable information resource to scientists and science program managers. I should point out that not until user income rises to about \$650,000 will it begin to provide some margin that can be applied to meet the costs of input. For this reason, as well as

the generally increased costs of basic operations each year, we must ask for an appropriation equal to prior years' funding.

Special Foreign Currency Program

The Special Foreign Currency Program provides grants of excess currencies for overseas archeological work, systematic and environmental biological research, astrophysical and earth sciences studies, and museum programs. An appropriation of \$6,000,000 is sought, an increase of \$2,500,000 over the current year's budget. The development and expansion of regular programs, as well as the opening up of important new research opportunities, especially in India and Poland, have resulted in a rising demand for these grants by American Institutions of higher learning. Some 200 such institutions in 32 states have benefitted or will be participating in this program.

Construction, Restoration and Renovation, of Buildings and Facilities

We are requesting \$46,359,000 for the planning, construction, restoration, and renovation of buildings and facilities. Many of these projects are meant to enhance our participation in the 200th anniversary of the Nation's independence. This request is distributed among four appropriation accounts.

Planning and repairs at the National Zoological Park	\$675,000
Restoration and renovation of buildings and facilities	\$5,409,000
Construction of the National Air and Space Museum	\$40,000,000
Planning for the construction of a Bicentennial Outdoor Museum	\$275,000

At our National Zoological Park, funds in the amount of \$275,000 are requested to cover architectural engineering fees for

the construction design of an attractive, natural setting lion and tiger exhibit. This is in accord with preliminary site plans that have been developed under the current redesign effort for for master plan for the redevelopment of the Zoo. We are also seeking \$400,000 to continue the program of renovation and repairs to existing Zoo facilities. This funding is required to keep the old part of the Zoo in use for the visiting public; for the care and well being of the animals; and to keep the newer facilities in good condition to guard against larger repair bills later.

Our total request for the restoration, renovation, and improvements to existing buildings totals \$5,409,000. Of this total, an amount of \$3,500,000 is for the airconditioning and renovation of the Arts and Industries Building for use for the "Year of the Centennial." This will be a recreation of the atmosphere and style of American life at the time of the Philadelphia Centennial Exposition of 1876 midway between our Nation's founding and its 200th birthday. I should point out that the airconditioning of this building is a permanent investment in one of our most important museum buildings on the Mall, the timing of which is tied to the Bicentennial, but the benefits of which will continue forever. This request also includes \$220,000 for road and power improvements at our Mt. Hopkins, Arizona, Observatory; \$125,000 for the addition of a small storage building for the National Air and Space Museum's use at Silver Hill, Md.; and \$1,214,000 for general repairs and improvements to some eight museum buildings and research facilities. It also includes \$250,000 for planning

for a sixth floor addition to the History and Technology Building for use for a library of science and technology and \$100,000 for feasibility studies on visitor parking and a National Museum of Natural History Research Center.

For the National Air and Space Museum's construction, we are asking for an appropriation of \$40,000,000. This will permit the award of a construction contract in mid-FY 1973 and a construction schedule which will lead to an opening in July 1976. This building, in addition to being a showcase for historic machines, will have a wide variety of exhibits concerned with the science and technology of the space age. The public will be able to see, gathered together under one roof for the first time, objects and explanations showing how man has used a broad range of disciplines to achieve flight. The impact of flight upon our environment and our culture will be displayed to the public using the latest multi-media techniques.

Legislation now before the Congress would authorize the establishment of Bicentennial Park at two federally owned sites on the Potomac River -- Fort Foote, in Prince George's County, Md and Jones Point on the southern edge of Alexandria, Virginia. For planning this project, we are seeking an appropriation of \$275,000. This outdoor museum would include a small visitor center, parking and other necessary visitor facilities, a parade ground, a naval ordnance park, an outdoor theater, and a boat landing. Special attention will be given to exhibits having significance to the national Bicentennial observance, such as a continental encampment and a palisaded fort.

This completes my summary presentation of the Smithsonian's budget request for next year. For over 125 years we have provided the American people with greater knowledge and appreciation of their environmental, cultural, and technological heritage. With the continued support of the Congress we are confident of our continued ability to serve.

EFFECT OF EMPLOYMENT CONTROL ON STAFFING

Senator BIBLE. You may proceed, Doctor.

Dr. RIPLEY. Thank you, very much, Mr. Chairman. I would like to begin my highlighting by stating this past year, our 125th, has been a good one.

The principal problem is that the employment control instituted by the President has slowed our efforts to develop the level of support staffing approved in the fiscal year 1972 appropriations. Primarily, this control has had an adverse effect on the National Museum of Natural History, the National Zoological Park, and the Buildings Management Department where there were major employment increases allowed in the current budget year. This effort continues to have our high priority.

1972 ACCOMPLISHMENTS

With so many notable events of the past year to report, I must be selective in the interest of conserving time today. A fuller report appears in the Smithsonian Year. These events I would like to mention vividly illustrate the scope of our present activities. They serve to document at least in small measure our accomplishments with the resources you have provided. They also show our strong efforts to obtain financial and other support for our work from private sources.

VISITOR ATTENDANCE

Our visitor attendance in fiscal year 1971 to buildings on and in the vicinity of the Mall was 13,800,000, an increase of about 20,000 over the previous year. An additional 3 to 4 million persons visited the National Zoological Park and about 50,000 came to the Anacostia Neighborhood Museum. This makes a grand total of almost 18 million persons who used the Institution's educational and cultural resources.

Senator BIBLE. The 20 million people is not accurate.

Dr. RIPLEY. No; it should be about 18 million. We estimate that by bicentennial year it will increase to 50 million. Our newest building, the Renwick Gallery, that I am sure you have heard about, is a very successful museum and has been visited by 50,000 people already since it opened in late January.

We have an active program in research, as you know, and our staff has produced almost 1,000 research and other scholarly publications during the year.

MULTIMIRROR TELESCOPE

With the support of the Congress we have been able to proceed on the construction of the multimirror telescope for our astrophysical observatory in Arizona in conjunction with the University of Arizona. I am happy to report this telescope is considered to be a priority project by a committee established by the National Academy of Sciences, National Research Council which has under preparation a report on the Nation's needs for astrophysics in the 1970's. We are particularly pleased that they have recognized the concept of a multimirror telescope, and we are already in operation in constructing one.

Senator BIBLE. How much does the University of Arizona cooperate with this?

Dr. RIPLEY. This is a joint cooperation, in which they have provided the six primary mirror discs. They obtained the six mirror blanks as residual from an Air Force project.

Senator BIBLE. Well, so you are matching Federal dollars with Federal dollars, is that true?

Dr. RIPLEY. Yes; that is largely correct, but the university has applied some non-Federal resources to the joint effort. The work being done now includes studies of how to put these mirrors together to achieve maximum effectiveness, as if, indeed, each mirror was part of a larger mirror. So instead of having six mirrors 6 feet across, we anticipate having the effect of one mirror.

Senator BIBLE. What will be the total cost to the Smithsonian Astrophysical Observatory?

Dr. RIPLEY. \$1.5 million.

Senator BIBLE. From beginning to end?

Dr. RIPLEY. Yes, sir; for this multimirror telescope project.

Senator BIBLE. And that is 100-percent Federal funded?

Dr. RIPLEY. Our portion, yes.

HARBOR BRANCH FOUNDATION LABORATORY

Senator BIBLE. All right. We just heard about the National Air and Space Museum, you don't need to dwell on that.

The Harbor Branch Foundation Laboratory—

Dr. RIPLEY. This is an activity in Florida essentially privately financed with grants we have been receiving from the Harbor Branch Foundation and other foundations. It is a very large extension of our oceanographic program with the opportunity for scientists to develop new techniques of underwater study through the use of our submarine.

Senator BIBLE. Doesn't that overlap with the Oceanographic Institute? Do they do the same thing?

Dr. RIPLEY. Not exactly. In any case we cooperate fully with whoever is available to cooperate with.

Senator BIBLE. Well, what is the primary agency for oceanographic work? Isn't it the Oceanographic Institute, whatever the title is?

Dr. RIPLEY. As you recall, the Smithsonian started oceanographic work in 1870. It is difficult for us to assume that we are not qualified to continue that work.

Senator BIBLE. I didn't know that.

Dr. RIPLEY. Our first work was involved with an organization known as the U.S. Fisheries Commission. My predecessor, Spencer F. Baird, wore two hats and served as the first U.S. Fish Commissioner and the Secretary of the Smithsonian.

Senator BIBLE. Why do you have to have both the oceanographic agency or institute or whatever you call it, do this underwater work, oceanographic work, which you say you are doing? Really, my question is you are both doing the same thing, are you or aren't you?

Dr. RIPLEY. No, sir.

Senator BIBLE. Where is the difference?

Dr. RIPLEY. The difference is that we are involved in innovative experiments and basic research.

Senator BIBLE. How many people do you have in your budget doing oceanographic work?

Dr. RIPLEY. Within our private budget or the Federal budget?

Senator BIBLE. Well, both. How much comes out of Smithsonian for oceanographic work and what is the total Federal amount? It can be supplied for the record.

Dr. RIPLEY. Well, Dr. Challinor has that.

Dr. CHALLINOR. We apply about \$3.1 million, in our Federal budget to marine scientific activities.

MARINE SCIENCE

Senator BIBLE. That is the total Federal budget?

Dr. CHALLINOR. Yes, about \$3.1 million is now currently being used in what we call marine science.

Senator BIBLE. How much of that \$3.1 million total, and it sounds low to me, goes to Smithsonian?

Dr. CHALLINOR. That is the Smithsonian expenditure.

Senator BIBLE. I wanted the figure involving all the Federal agencies.

Dr. CHALLINOR. I would have to furnish that for the record.

Senator BIBLE. All right.

(The information follows:)

The total fiscal year 1972 federal expenditures for marine science for all agencies is expected to be about \$609.6 million. This can be broken down as follows:

	<i>Millions</i>
Department of Defense.....	\$245.8
Department of Commerce (mostly NOAA).....	161.1
Department of the Interior.....	33.8
National Science Foundation.....	68.8
Department of Transportation (mostly Coast Guard).....	53.5
Environmental Protection Agency.....	17.0
Department of State.....	9.3
Atomic Energy Commission.....	8.7
Health, Education and Welfare.....	6.0
Smithsonian Institution.....	3.1
National Aeronautics and Space Administration.....	2.0
Agency for International Development.....	0.5
Total	609.6

CHESAPEAKE BAY CENTER

Senator BIBLE. Now, you are down to the Chesapeake Bay Center for Environmental Studies.

Dr. RIPLEY. Here again, working with private funds, we have nearly completed the land acquisition and hope to have a total of about 2,500 acres under control. This, we believe, will be a key area for environmental research for the future. Being so near Washington, in future years it will become, in effect, a national resource even though it happens to be administered by the Smithsonian.

Senator BIBLE. How much is spent on that this year and how much is Federal and how much is private?

Dr. RIPLEY. We have spent \$1.6 million in total in private funds for the acreage we have.

Senator BIBLE. How many Federal dollars are in this project?

Dr. RIPLEY. Dr. Challinor should have that.

Dr. CHALLINOR. For the Chesapeake Bay Center?

Senator BIBLE. Yes.

Dr. RIPLEY. \$129,000 is the Federal budget this year. This is for operations, of course, as opposed to acquisitions of land.

Senator BIBLE. All right.

The next item. Tell us about the Carnegie Corp., the Carnegie Mansion, and the Renwick Gallery rehabilitation, although by now I guess that is completed, isn't it?

Dr. RIPLEY. Yes.

Senator BIBLE. As a result of substantial funding for the National Museum Act this year you have been able to respond to 18 projects—

Dr. RIPLEY. We are asking that our budget for the National Museum Act be extended to the amount of the authorized figure, namely, \$1 million.

Senator BIBLE. Very well, you have written me and told me in detail about the Hirschhorn additional gift and the festival for American Folklore—

Dr. RIPLEY. Last summer's Festival was our fifth and we are planning to have our sixth this summer. Last year we celebrated the State of Ohio. This year we will celebrate the State of Maryland. In addition, we continue to support and encourage participation by American Indians.

ANACOSTIA NEIGHBORHOOD MUSEUM

Senator BIBLE. Very well, on the Anacostia Neighborhood Museum with which I am familiar, give us a little detail. How much money is there in this budget for the Anacostia Neighborhood Museum?

Dr. RIPLEY. A total of \$261,000, Mr. Chairman in fiscal 1973. We have the Director here this morning in case you would like to hear from him, Mr. Kinard.

Senator BIBLE. The question I would ask is how much do you receive in the way of private grants on that?

Dr. RIPLEY. We received \$100,000 in 1970 from the Carnegie Corporation, to be used over 2 years, \$25,000 in 1970 from the Cafritz Foundation, and a Federal funds grant from the Department of Housing and Urban Development of \$50,000 in 1971. These were for special urban studies projects.

Senator BIBLE. For a total of what?

Dr. RIPLEY. For a total of \$175,000.

Senator BIBLE. Did I understand you to say in this year's budget you have a figure of \$261,000?

Dr. RIPLEY. Yes, of requested Federal funds for museum operations.

Senator BIBLE. These funds from the Carnegie Foundation, will they be available for you in the 1972 fiscal year?

Dr. RIPLEY. Some of those funds will carry over, but we have a major application in now to another foundation. What we hope is that if we can receive Federal funds for a temporary construction in which we will do certain kinds of teaching and preparation of exhibits at very low cost, we will then receive a major grant from a private foundation for the operation of this facility.

Senator BIBLE. Will that be matched on a dollar-for-dollar basis?

Dr. RIPLEY. No, I think the private grant will bear the major part of the costs. That will be for 5 years.

Senator BIBLE. And the private grant will be for a total of 5 years?

Dr. RIPLEY. Yes.

Senator BIBLE. How long do you expect the program to go on?

Dr. RIPLEY. I would expect the program as such would prove itself in 5 years, at which point we would decide whether to terminate or ask for Federal support.

Senator BIBLE. At what level for Federal support?

Dr. RIPLEY. Something in the neighborhood of \$200,000 a year.

Senator BIBLE. All right.

You next touch on the television documentary, "Smithsonian Adventure." Is that paid for entirely by Federal dollars?

Dr. RIPLEY. That is paid for entirely by private dollars.

Senator BIBLE. And the Smithsonian magazine is paid for by what?

Dr. RIPLEY. Private dollars.

BUDGET REQUEST AND JUSTIFICATION

Senator BIBLE. Tell me about your budget request for fiscal year 1973. The total appropriate request is \$106,923,000?

Dr. RIPLEY. Yes; which includes construction funds.

Senator BIBLE. All right. Break it out into categories such as "Salaries and expenses."

There will be printed in the record the justification material which you have supplied in support of your fiscal year 1973 budget estimate for this activity amounting to \$52,964,000, an increase of \$8,263,000 over the appropriation thus far for fiscal year 1972.

(The justification follows:)

Smithsonian Institution

"Salaries and Expenses"Summary Statement

Appropriation Act, FY 1972	\$44,701,000
Amount lapsing in FY 1972 due to employment limitations	<u>1,131,000</u>
Total of amounts shown on justifications as FY 1972 Appropriation adjusted	\$43,570,000
Funds returned to base for FY 1973	<u>600,000</u>
Base for FY 1973	\$44,170,000
Increase being sought for FY 1973	<u>8,794,000</u>
Total, FY 1973 Estimates	\$52,964,000

Report of Obligations by Objects
(In thousands of dollars)

	1971 <u>Actual</u>	1972 <u>Estimate</u>	1973 <u>Base</u>	1973 <u>Estimate</u>	Increase 1973 over 1973 Base
11 Personnel Compensation ...	\$25,380	\$27,741	\$27,996	\$30,884	\$2,888
12 Personnel Benefits	2,064	2,359	2,388	2,625	237
21 Travel & Transportation of Persons.....	397	596	587	679	92
22 Transportation of Things ...	198	245	222	307	85
23 Rent, Communications, and Utilities	2,564	2,917	2,916	3,560	644
24 Printing and Reproduction .	502	645	673	839	166
25 Other Services.....	2,996	4,609	4,926	5,965	1,039
26 Supplies and Materials.....	1,191	1,807	1,723	2,239	516
31 Equipment	937	1,801	1,864	4,540	2,676
41 Grants.....	<u>656</u>	<u>875</u>	<u>875</u>	<u>1,326</u>	<u>451</u>
Total Obligations.....	\$38,885	\$43,595	\$44,170	\$52,964	\$8,794
Lapsing.....	<u>10</u>	<u>1,106</u>	<u> </u>	<u> </u>	<u> </u>
TOTAL Appropriation	\$36,895	\$44,701		\$52,964	

Unit	1971 Actual		1972 Approp		Large Rest 1972 to Base		1973 Estimate		Analysis of Increases		
	Pos.	Amount	Pos.	Amount	(-)	(+)	Pos.	Amount	Nec Pay	Pos.	Amount
Sciences											
National Museum of Natural History	271	\$ 4,343	335	\$ 5,725	\$166	\$ 88	373	\$ 6,402	\$175	38	\$ 580
Smithsonian Astrophysical Observatory	57	2,107	57	2,702	47	25	58	3,003	18	1	305
Smithsonian Tropical Research Institute	45	639	52	783	21	11	58	854	42	6	39
Radiation Biology Laboratory	40	954	46	1,157	20	11	48	1,329	26	2	155
Office of Environmental Sciences	34	619	39	785	23	12	42	830	16	3	40
National Air and Space Museum	41	631	44	761	23	12	64	1,227	12	20	465
Center for the Study of Man	7	153	10	207	3	2	13	258	4	3	48
Center for Short-Lived Phenomena	1	67	3	83	0	0	3	94	1	0	10
National Zoological Park	247	3,163	286	3,871	109	58	286	4,083	78	0	185
Total Science	743	\$12,676	872	\$16,074	\$412	\$219	945	\$18,080	\$372	73	\$1,827
History and Art											
Museum of History and Technology	158	\$ 2,242	157	\$ 2,507	\$ 79	\$ 41	163	\$ 2,773	\$ 44	6	\$ 260
National Collection of Fine Arts	70	1,036	72	1,245	33	17	78	1,453	24	6	200
National Portrait Gallery	38	782	39	908	21	11	46	1,104	16	7	190
Joseph H. Hirshhorn Museum and Sculpture Garden	18	385	21	640	10	5	35	2,048	13	14	1,400
Freer Gallery of Art	7	57	8	83	3	2	14	180	3	6	95
Archives of American Art	0	166	11	181	6	3	12	208	5	1	25
National Armed Forces Museum Adv Bd	8	154	6	126	5	3	7	147	3	1	20
Total History and Art	299	\$ 4,822	314	\$ 5,690	\$157	\$ 82	355	\$ 7,913	\$108	41	\$2,190
Public Service											
Anacostia Neighborhood Museum	11	\$ 151	15	\$ 183	\$ 5	\$ 3	18	\$ 261	\$ 5	3	\$ 75
Office of International Activities	8	138	9	146	5	3	10	170	6	1	20
International Exchange Service	9	126	9	140	3	2	9	157	8	0	10
Division of Performing Arts	7	215	7	208	5	3	10	294	2	3	86
Office of Public Affairs	12	247	12	270	7	4	13	300	8	1	25
Total Public Service	47	\$ 877	52	\$ 947	\$ 25	\$ 15	60	\$ 1,182	\$ 29	8	\$ 216

Unit	1971 Actual		1972 Approp.		Lapse 1972 to Base		1973 Estimate		Analysis of Increases	
	Pos.	Amount	Pos.	Amount	(-)	(+)	Pos.	Amount	Nec	Pay Pos. Amount
<u>Special Programs</u>										
American Revolution Bicentennial	2	\$ 400	2	\$ 400	\$ 5	5	2	\$ 1,000	\$ 0	0 \$ 600
Environmental Sciences Program	3	150	8	275	4	4	8	275	0	0 250
Major Exhibitions	0	0	0	525	0	0	0	775	0	0 400
National Museum Act	0	0	3	600	0	0	3	1,000	0	0 65
Academic & Educational Programs	18	596	22	680	6	3	24	750	8	2 50
Research Awards	0	400	0	425	0	0	0	475	0	0
Total Special Programs	23	\$ 1,546	35	\$ 2,905	\$ 15	\$ 12	37	\$ 4,275	\$ 8	2 \$1,365
<u>Documentation and Conservation</u>										
Conservation Analytical Laboratory	11	162	13	\$ 192	\$ 5	3	16	\$ 293	\$ 5	3 \$ 98
Smithsonian Archives	6	59	6	73	3	2	8	119	8	2 39
Smithsonian Libraries	54	741	59	886	27	14	67	1,120	15	8 232
Registrar	30	303	31	341	9	5	32	359	4	1 18
Photographic Services	20	255	23	292	10	5	27	465	16	4 162
Total Conservation & Documentation	121	\$ 1,520	132	\$ 1,784	\$ 54	\$ 29	150	\$ 2,356	\$ 48	18 \$ 549
<u>Administrative & Central Support</u>										
Office of the Secretary	38	\$ 651	40	\$ 656	\$ 27	\$ 11	47	\$ 797	\$ 12	7 \$ 145
General Counsel	9	151	9	166	7	4	10	182	3	1 16
Treasurer	31	575	33	662	15	8	35	733	8	2 70
Personnel	31	396	32	468	16	8	35	508	8	3 40
Smithsonian Press	25	691	25	752	14	7	26	805	15	1 45
Information Systems Division	14	235	14	264	9	5	17	326	8	3 58
Ofc of Smithsonian and National Museum Programs	9	200	9	314	4	2	9	315	3	0 0
Office of Exhibits	165	2,412	159	2,516	77	41	159	2,526	46	0 0
Supply Division	21	330	21	369	10	5	21	390	6	0 20
Management Analysis Office	9	148	10	177	6	3	10	178	4	0 0
Duplicating Section	7	100	7	90	3	2	8	119	14	1 16
Other	13	184	13	192	7	3	13	192	4	0 0
Total Admin & Central Support	372	\$ 6,073	372	\$ 6,626	\$ 195	\$ 99	390	\$ 7,071	\$ 131	18 \$ 410
Buildings Management Department	768	\$ 9,371	793	\$10,675	\$ 273	\$144	877	\$12,087	\$ 386	84 \$1,155
Lapsing										
Total	2,373	\$36,895	2,570	\$44,701	\$1,131	\$600	2,814	\$52,964	\$1,082	244 \$7,712

NECESSARY PAY AND RELATED BENEFITS

An increase of \$1,082,000 is required for personnel compensation and personnel benefits. The operations of the Smithsonian have been carefully reviewed and the following cannot be absorbed by funds already in the base.

- | | |
|---|--------------------|
| a. To finance periodic step increases made in accordance with the Government Employees Salary Reform Act of 1964 and with prevailing practices in the wage scale..... | \$ 870,000 |
| b. To finance wage raises for the manual employees in Panama and the wage grade, wage leader, and wage supervisor employees in the rest of the Smithsonian Institution..... | 410,000 |
| c. Reduction for two less work days in FY 1973..... | -198,000 |
| | <u>\$1,082,000</u> |

Periodic step increases are made in accordance with Government Employees Salary Reform Act of 1964 and prevailing practices in the wage system. The apparent cost was determined through a position-by-position study and has been offset by the effect of employees leaving the Smithsonian and not receiving their within-grades and by employing new personnel at lower steps. This salary increase would average approximately \$338 for each employee. In the past the amount was also offset by the effects of promotions of employees in their present positions. This has not been done this year because of the current controls on promotions in order to reduce the average grade.

The Smithsonian Institution employs over 700 Wage Employees. These employees usually receive a wage raise in the fall of each year. The President's Order prevented these employees from receiving a raise until about November 14, 1971. The new raise will be 5.5 percent which is in line with the General Schedule raise effective January 9, 1972. Some of the Wage Employees also benefitted from the application of the Monroney Amendment provision to the Washington, D.C. area. This new 5.5 percent raise is effected on the salaries already increased by the Monroney raise and will average \$552 per wage employee. The manual employees at the Smithsonian Tropical Research Institute in Panama received a raise in July 1971 and are expected to receive another raise in July 1972.

FY 1973 will have two less work days than FY 1972 therefore these increases have been offset by the return of \$198,000 previously granted for this purpose.

NECESSARY PAY AND RELATED EXPENSES
(IN THOUSANDS OF DOLLARS)

	<u>Periodic Step Inc.</u>	<u>Wage Raises</u>	<u>Two less Work Days</u>	<u>Total</u>
Nat. Museum of Natural History	\$197	\$ -	\$ (22)	\$175
Smithsonian Astrophysical Obser.	22	-	(4)	18
Smithsonian Tropical Res. Inst.	23	23	(4)	42
Radiation Biology Laboratory	20	10	(4)	26
Office of Environmental Sciences	17	1	(2)	16
Nat. Air & Space Museum	15	1	(4)	12
Center for the Study of Man	4	-	-	4
Center for Short Lived Phenomena	1	-	-	1
National Zoological Park	50	50	(22)	78
Nat. Museum of History & Tech.	56	-	(12)	44
Nat. Collection of Fine Arts	28	2	(6)	23
Nat. Portrait Gallery	20	-	(4)	16
Joseph H. Hirshhorn Museum	15	-	(2)	13
Freer Gallery of Art	4	1	(2)	3
Archives of American Art	5	-	-	5
Nat. Armed Forces Mus. Ad. Bd.	3	-	-	3
Anacostia Neighborhood Museum	6	1	(2)	5
Office of International Act.	6	-	-	6
International Exchange Service	6	2	-	8
Div. of Performing Arts	4	-	(2)	2
Office of Public Affairs	9	-	(1)	8
American Rev. Bicentennial	-	-	-	-
Environmental Science Prog.	-	-	-	-
Major Exhibitions	-	-	-	-
National Museum Act	-	-	-	-
Academic & Education Prog.	10	-	(2)	8
Research Awards	-	-	-	-
Documentation and Conservation:				
Conservation Lab	6	-	(1)	5
Smithsonian Archives	8	-	-	8
S.I. Libraries	19	2	(6)	15
Registrar	6	-	(2)	4
Photographic Services	18	-	(2)	16
Secretary	14	-	(2)	12
General Counsel	4	-	(1)	3
Treasurer	10	-	(2)	8
Personnel	10	-	(2)	8
Press	17	-	(2)	15
Information Systems Division	9	-	(1)	8
Off. of Smith. Nat. Mus. Prog.	3	-	-	3
Exhibits	47	10	(11)	46
Supply	7	-	(1)	6
Management Analysis Office	4	-	-	4
Duplicating	7	7	-	14
Other Central Support	5	-	(1)	4
Buildings Management Department	<u>155</u>	<u>300</u>	<u>(69)</u>	<u>386</u>
TOTAL	\$870	\$410	\$ (198)	\$1,082

SCIENCE

Discovering the history and development of natural phenomena and the characterization of natural events, especially as they relate to the evolution of man in response to his physical and social environment, represents the major scientific goal of the Smithsonian. If there is a single scholarly bond of interest among all the activities of the Institution, it is a common concern with history, the history of art, the history of technology, the history of science, and indeed natural history. Our staff of scientists is concerned with elucidating the interrelationships between organisms (including man), communities, and populations with the physical, chemical, and geological factors which play a role in forming the ecology of the earth now as in past ages. More than seventy specialties are represented by the Smithsonian's community of scientists. Activities range from astrophysical investigations that contribute to our understanding of the origin and mechanics of the universe, through investigations on microscopic organisms in the ocean depths, to the development of man as shown by his artifacts and productivity.

There is a major change occurring now in the nation's general scientific effort. This change regards the type of input information more and more investigators view as necessary to further research on problems which are biological or physical in nature. While the change is a contemporary one, it is related in an important way to the basic and long-term activities of the Smithsonian and similar research institutes across the nation, and indeed the world. The change, simply stated, involves the following.

Ecological investigations concerned with identifying long-term factors affecting environmental balance increasingly are becoming dependent on analysis and information constructed around collections of objects. Systematic collections of biological and geological specimens contain standards for describing and measuring ecological changes. Unfortunately, as of now, not enough historical information has been extracted to create "bench-marks" of change which would give scientists accurate indices for speculating about ecological trends, and about man-made solutions to problems which would be in keeping with the natural evolutionary process.

This, however, is the type of work which the various scientific laboratories and museums of the Institution have been involved in for a century and a quarter. In recent times, systematics has not been considered one of the more fashionable of sciences. Even during the hey-day of federal support for scientific research, systematics did not receive the measure of support needed to maintain a level of involvement adequate to the nation's best environmental interests. But now the demands for taxonomic information are increasing rapidly as our national programs of science and technology are redirected to cope with environmental deterioration.

NATIONAL MUSEUM OF NATURAL HISTORY

No. of Perm Pos	Base 1973*	Increase Requested	1973 Estimated
	<u>335</u>	<u>38</u>	<u>373</u>
11 Pers Comp	\$ 4265	\$ 437	\$ 4702
12 Pers Benefits	354	37	391
21 Travel	103	24	127
22 Trans of Things	1	3	4
23 Rent, Comm & Util ...	21	2	23
24 Printing			
25 Other Services	358	100	458
26 Supplies & Materials ..	110	42	152
31 Equipment	435	110	545
41 Grants			
TOTAL	<u>\$5647</u>	<u>\$ 755</u>	<u>\$ 6402</u>

Analysis of Increase

Pay Increase	175
Program	580

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Correct Museum Support Deficiencies (31 positions; \$410,000). A serious imbalance exists between the professional research curatorial staff and the support personnel and resources available for their efforts (museum technicians, assistants, equipment, supplies, etc). The increase requested (the second in a planned 3 year program) will allow continued progress toward the support ratios recommended by the President's Science Advisory Committee and the Panel on Systematics and Taxonomy. Thirty-one technicians, clerks, and illustrators (\$233,000) are requested, along with support funds (\$177,000) for travel, supplies, materials, and equipment.

Bone Biology (2 positions; \$40,000). The Museum is involved in basic research with the National Collections to explain the ecological relationships of organisms and their interaction with their environments, past and present. The requested increase would permit research on bone biology and bone disease processes which will lead to a better understanding of problems which plague mankind today. The request is for an organic chemist and a technician (\$29,000) and \$11,000 for support funds.

Physical Sciences Laboratory (\$50,000). With funds provided in FY 1972 a most encouraging start has been made on the equipping of a physical sciences laboratory. The increase, along with such other funds as can be made available in FY 1973, would permit the establishment and operation of this new facility which will provide Museum-wide programs designed to trace the history and effects of pollution through study of the specimens in the National Collections.

Electronic Data Processing (5 positions; \$80,000). If this Museum is to serve as a base for important environmental research, it must make its collections and accompanying data more accessible to researchers and scholars. Data processing provides the only means by which this can be done. This request would for the first time include data on prehistoric man, insects, and gems. Five technicians (\$37,000) and support funds (\$43,000) are requested.

NATIONAL MUSEUM OF NATURAL HISTORY

1971 Actual	\$4,343,000
1972 Appropriation.....	\$5,559,000 <u>1/</u>
1973 Estimate.....	\$6,402,000

The National Museum of Natural History (NMNH) serves as a national and international center for the natural sciences. It maintains the largest reference collections in the Nation and conducts a broad program of basic research on man, plants, animals, fossil organisms, rocks, minerals, and materials from outer space. Its research is concerned with classification, distribution, analysis, and environmental and ecological relationships. Its studies in systematics and biology are providing new information required for the solution of major national problems of conservation and pollution, food production, improvement of medical knowledge, and for planning national and international programs leading to productive ecology and environmental management. It engages in joint educational programs with universities, conducts science seminars, and provides leadership in the improvement of museum techniques and collections management, especially through the application of computer technology.

The NMNH has the legal responsibility (20 U.S.C. 59) to serve as the Federal repository of all collections and objects of natural history, archeology and ethnology. In recent years, collections made under grants of the National Science Foundation have added thousands of new specimens. Additionally, the NMNH increasingly has become the repository for valuable collections obtained from other sources such as the scientific community, academic institutions, and private individuals. Because the Museum is the national repository, it has responsibilities far beyond the research of its own staff. It assists the layman and the scientist with identifications, lends specimens, and safeguards the tangible results of research. Through use of its collections, NMNH is a vigorous interdisciplinary scientific organization devoting an increasing share of its resources to the public understanding of environmental problems.

The Director of the National Science Foundation, Dr. William D. McElroy, stated the case for the importance of systematic collections in an August 1970 letter acknowledging receipt of a major national report on the importance of these materials 2/.

"The collections of natural history objects in our universities and natural history museums are, indeed, an essential resource, and their proper usage and maintenance is vital to continued progress in the great work of organizing our knowledge of the natural world. At the present time in history when ominous disruptions of our ecosystem threaten man's very existence, the need for increased understanding of the working of this ecosystem and the diversity of organisms comprising it has never been more keenly felt nor widely appreciated. The systematic collections provide the fundamental basis for this understanding."

The NMNH has in its collections approximately one-third of all the natural history specimens in the United States. There is no other repository

1/ FY 1972 appropriation adjusted by funds lapsing in FY 1972.

2/ The Systematic Biology Collections of the United States: An Essential Resource. A report to the National Science Foundation by the Conference of Directors of Systematic Collections.

anywhere in the world with so much documentary material for determining the composition of biota from millions of years ago to the present. For this reason the controlled acquisition, protection, and increased availability of the National Collections continue to occupy a high priority. In addition to caring for the collections, the Museum also conducts a level of systematic, ecologic, and evolutionary research that is not approached elsewhere in this country. Many of the present controversies in the fields of environmental protection, pollution abatement, and control arise from interpretations made and conclusions drawn from far too fragmentary "facts". The Museum is in the unique position of having the largest source of rare data from which solid facts can be established for restoring a measure of environmental quality to the management of natural resources.

For FY 1973, a request is made for an additional \$580,000 to implement the second year of a three year program designed to correct serious imbalances that exist between the number of scientists and their support staff to assure proper curation of the collections (\$410,000); to strengthen the Museum's ability to respond to national problems by intensifying its research efforts in bone biology which are directly associated with collections in ecological and biological areas (\$40,000); to continue with the development of a Physical Science Laboratory (\$50,000); and to continue strengthening the Museum's capability to extract and automate information on the collections (\$80,000). In addition an increase of \$175,000 is needed to cover necessary pay.

Need for Increase

1. Museum Support Deficiencies (31 positions and \$233,000 for personnel costs; \$177,000 support costs)

The increased funding provided to the Museum in FY 1972 is permitting the initiation of a phased program for correction of the support shortages that were identified in the FY 1972 budget presentation. This will make the museum more useful to institutions and agencies that need our expertise in their research. The FY 1972 appropriation will allow the establishment of a support staff/scientist ratio of 1.4 to 1.0. This is an improvement over the relationship which existed in FY 1971 and will increase the effectiveness and productivity of the scientific and high level technical personnel. But FY 1972 will still fall short of the goal of three support personnel (technical and clerical) for each professional employee recommended in May 1969 by the President's Science Advisory Committee and the Panel on Systematics and Taxonomy. The FY 1973 request will provide for 31 of the most urgently needed support positions and will permit the Museum to attain a support ratio of 1.7 technical and clerical personnel for each scientist (see Table I). In subsequent years we will seek to reach a staffing level of 2:1 which will then be evaluated before a request is submitted to permit establishment of a ratio approaching the 3:1 relationship recommended. Of the proposed \$410,000 increase, \$233,000 are associated with the personnel being requested, and \$177,000 are sought to continue to improve current levels of funding for travel, supplies, materials, and equipment purchase, replacement, and maintenance. Included in the \$177,000 is approximately \$51,000 for equipment items, which along with current base funding allowed in FY 1972 would place the museum's ability to acquire and replace needed museum and scientific equipment annually at a funding level of about \$250,000. A large part of these purchases are related to special scientific instrumentation needs. Such equipment is frequently complex and costly, but is essential to acquire if the research scientists are to keep abreast of the developing techniques in their specialties. The goal through FY 1975 is to increase the scientific purchase and replace-

Table I

NATIONAL MUSEUM OF NATURAL HISTORY

* Ratios of Man-Years of Effort Between Technicians/Scientists

Department	FY 1971			FY 1972a/ Support Scientist			FY 1973b/ Support Scientist		
	Support	Scientist	Ratio	Support	Scientist	Ratio	Support	Scientist	Ratio
Anthropology	23	16	1.44:1.0	25	17	1.47:1.0	32	18	1.78:1.0
Botany	15	17	0.88:1.0	22	18	1.22:1.0	30	18	1.67:1.0
Entomology	17	11	1.55:1.0	17	12	1.42:1.0	20	12	1.67:1.0
Invertebrate Zoology	20	18	1.11:1.0	25	18	1.39:1.0	28	18	1.56:1.0
Mineral Sciences	10	10	1.00:1.0	13	10	1.30:1.0	16	10	1.60:1.0
Paleobiology	24	18	1.33:1.0	27	19	1.42:1.0	31	19	1.63:1.0
Vertebrate Zoology	21	13	1.62:1.0	24	13	1.85:1.0	27	13	2.08:1.0
TOTALS	130	103	1.26:1.0	153	107	1.43:1.0	184	108	1.70:1.0

* Ratios apply to personnel assigned directly to science support. They exclude EDP Applications and NMNH Director's Office.

a/ FY 1972 relationships assume planned employment of personnel within allowed OMB employment ceilings.

b/ FY 1973 reflects relationships which would obtain with full implementation of FY 1972 OMB allowances and full employment of personnel requested in FY 1973 increases.

ment fund to an annual level of approximately \$500,000. Again, operating experience at this level would be evaluated and a report compiled indicating what might be a desirable and optimum fund level.

The balance of the increase, \$126,000, is directed at continuing to improve the drastically low levels of support which were available per scientist for field trips, normal supplies and materials, and other centrally provided services. In 1971, only about \$900 per scientist was available for these purposes. For FY 1972, the figure will approach \$2,700 to \$2,900. The requested increase will further improve the average to about \$3,900 to \$4,000 per scientist. The Museum is currently using as a target average for FY 1975, about \$6,000 per scientist which seems to be reasonable in light of the scope of activities and the increasing costs of travel, transportation, supplies, and materials. A portion of the \$126,000 requested will be earmarked for the temporary employment of outstanding scientists, as they become available to study and curate special portions of the collections.

2. Bone Biology (2 positions and \$29,000 personnel costs; \$11,000 support funds)

Human bone functions intimately in the metabolism of food, minerals, muscles, and blood. In addition it provides support for physical activity. Environmental factors such as food supply, disease organisms, pollutants, and other factors affect the structure and composition of bone on all levels. Because the record of these effects is retained indefinitely in the skeleton, it is possible to extend knowledge about environmental factors in human health and disease from skeletal samples obtained from various ecological settings and time periods. Initially the major emphasis in this research would be on developing data from modern skeletal samples which can be used as a basis for future studies on environmental factors in human archeological samples. This same data will serve in the establishment of an international registry on bone disease processes and would lead to a better understanding of some modern diseases such as anemia, cancer, osteomyelitis, rickets, scurvy, syphilis, and tooth decay. The request would provide an organic chemist and a technician (\$29,000) and support funds (\$11,000) for computer time, supplies, materials, and equipment.

3. Physical Sciences Laboratory (\$50,000 support funds)

The Museum is establishing a general physical sciences installation which will be used by scientists working in many diverse fields. The principal unit required in the first phase for a crystallography examinations, a single crystal diffractometer, is being purchased and installed from funds (about \$45,000) provided in FY 1972. This versatile instrument will provide the data needed to solve problems related to crystal structures. Materials that have crystalline structures which would be studied with this instrument include metals, minerals, chemicals, and many biological materials. This unit when operational will increase the scope and value of current programs, such as the study of lunar rocks. Related equipment needed for X-ray studies would be purchased in FY 1973. This includes specialized single-crystal cameras, microscopes, and photomicrographic equipment. To fully automate the diffractometer, the acquisition of a modern solid-state calculating system attached to the unit is necessary to permit rapid data reduction, prevent delays and errors associated with hand calculations, and avoid the problems and expense associated with conversion to computer operation of this intermediate scale of computations. A portion of the increase would be used to purchase a small system to completely automate the diffractometer and provide in-house computing capabilities vitally needed in a modern physical

sciences laboratory. For example, necessary microprobe calculations could be performed within minutes of obtaining the raw data. Rapid data evaluation is critical where results provide a guide to, and are pre-requisite to, additional research. Currently efforts are being made to increase the collection of synthetic (man-made) crystalline materials for both research and documentation purposes. Synthetics have a greater bearing on the evaluation of natural processes and lead directly to involvement in solid state research. The proposed instrumentation would greatly strengthen the analytical power of existing museum facilities, thereby adding new and much greater dimensions to current and planned investigations at a minimum additional cost. In addition to the base funding received in FY 1972, \$50,000 are being sought for the continued equipping of this facility.

4. Electronic Data Processing Applications (5 positions and \$37,000 for personnel costs; \$43,000 support funds)

The electronic data processing program of the Museum is part of its responsibility for making the National Collections more relevant to science and making its scientists more productive. The program has two goals: to bring the benefits of modern electronic data processing techniques to the traditional functions of the Museum and to stimulate new and deeper analysis of specimens and their environment in order to learn more of their evolution, distribution, and community structure. The increased funds will greatly improve the Museum's EDP Program in terms of breadth of collection coverage without a proportionate increase in planning and supervisory personnel. Individual projects have been selected for inclusion to be covered and services to be derived. In FY 1971 information was computer recorded on about 10,000 fossil marine organisms, 15,000 modern mammals, 5,000 type specimens of plants, and 8,000 specimens of modern shrimp and related animals. This effort should be nearly tripled in FY 1972. Despite this excellent progress, however, it is clear that many years of work remain. There are roughly 55 million specimens already in the Museum's collections, perhaps a third of which are sufficiently critical to current scientific research to warrant computer entry.

Funds requested for FY 1973 would provide 5 processing technicians (\$37,000) and support funds (\$43,000) to intensify work in the departments. Support for automation of this work is being sought in the budget request of the Information Systems Division. In invertebrate zoology, work will be extended to include entry of information on four new collections. In addition, projects will be initiated in the departments of entomology, anthropology, and mineral sciences. The entry of data on gem and mineral specimens planned by the department of mineral sciences also will be valuable in that it will provide improved security and control through a comprehensive inventory of these specimens, many of which have high intrinsic value. About one quarter of the requested increase would be used in support of biostatistical, biographical, and taxonomic research involving computer processing of data.

All of the activities of the EDP Program are based on the proposition that data about specimens are at least as important as the specimens themselves in the modern context of the life sciences. Improvement in our ability to handle these data has already begun to yield important dividends in the area of collection management. Valuable benefits will be achieved as the files of stored data increase to the point where they can be queried directly by scientists in academic and research institutions, commercial organizations, and government agencies, thus achieving very large savings in the time of scientific personnel and commitment of other resources.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

	<u>Base</u> <u>1973*</u>	<u>Increase</u> <u>Requested</u>	<u>1973</u> <u>Estimated</u>
No. of Perm Pos	<u>57</u>	<u>1</u>	<u>58</u>
11 Pers Comp	\$1179	\$ 32	\$1211
12 Pers Benefits	96	2	98
21 Travel	94	28	122
22 Trans of Things	10	50	60
23 Rent, Comm & Util ...	200	15	215
24 Printing	24		24
25 Other Services	914	27	941
26 Supplies & Materials..	75	30	105
31 Equipment	88	139	227
41 Grants			
TOTAL	<u>\$2680</u>	<u>\$323</u>	<u>\$3003</u>

Analysis of Increase

Pay Increase	18
Program	305

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Multiple Mirror Telescope (\$250,000). This is a cooperative project with the University of Arizona to build a multielement telescope with resolving power equal to a 240" conventional telescope. This new concept in design could revolutionize optical astronomical instruments. The requested \$250,000 increase on the base of about \$500,000 provided in the FY 1972 appropriation will continue development and fabrication of this telescope in FY 1973 according to the plan outlined in the FY 1972 budget request.

Other Research Programs (1 position; \$55,000). To understand our universe we must understand the nature and behavior of its parts - atoms and molecules. Advances in technology have opened several new "windows" through which SAO astronomers are observing atoms and molecules in space. To continue its observation through these windows, SAO requires (\$39,000) for supplies and materials and for computer analysis. One new physicist (\$16,000) is required to formulate mathematical models for atomic and molecular behavior in the atmospheres of earth, planets and in stars and interstellar space.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

1971 Actual	\$2,107,000
1972 Appropriation.....	\$2,655,000 ^{1/}
1973 Estimate.....	\$3,003,000

Since 1890, the Smithsonian Astrophysical Observatory (SAO) has pursued a broad program of research in astrophysics and, more recently, in related space sciences. SAO places particular emphasis on those programs that promise to achieve scientific leadership for the Observatory, or that establish standards or references for use by the scientific community. For example, during FY 1973 the Observatory plans to complete and publish a catalog giving the ultraviolet brightness of several thousand stars observed by the Telescope instruments on Orbiting Astronomical Observatory 2. During the same fiscal year SAO expects to complete Smithsonian Standard Earth III, containing a global set of geodetic parameters, superseding the 1969 Smithsonian Standard Earth II.

An appropriation increase of \$305,000 is requested to continue the development of a large optical telescope that will provide the kind of instrumentation essential to scientific achievement, and to extend certain important research programs. In addition, \$18,000 are required for necessary pay.

Need for Increase1. Multiple Mirror Telescope (\$250,000)

The Multiple Mirror Telescope, begun in FY 1972 with an appropriation of \$533,000, is an example of an enterprise in which the Observatory is pioneering a new concept in telescope design which could revolutionize optical astronomical instruments of the future. This is a cooperative project with the University of Arizona to build a multielement telescope with resolving power equal to a 240" conventional telescope. Many astronomers from other observatories have expressed keen interest in this program.

Following the program plan described in A Large Astronomical Telescope at Low Cost submitted to the Congress, SAO will continue the development and fabrication of this telescope during FY 1973 with the requested \$250,000 increase. By that time, detailed designs will have been completed and major construction contracts will be let.

2. Other Research Programs (1 position; \$55,000)

One additional position, (\$16,000) and general support funds for computer analysis, laboratory supplies, and instrumentation (\$39,000) are sought for the following research programs.

--The Earth as a Planet and the Solar System At many places in the universe physical conditions are such that matter exists in molecular form. For example, such conditions prevail in the atmospheres of the earth and other planets, the outer layers of some stars, and in interstellar space. Because the behavior of molecules is basic to so many natural phenomena it is important for the astronomer to understand processes involving them. Advanced physical theories provide one approach to an improved understanding of molecular processes.

^{1/} FY 1972 appropriation adjusted by funds lapsing in 1972.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>52</u>	<u>6</u>	<u>58</u>
11 Pers Comp	\$504	\$65	\$569
12 Pers Benefits	60	5	65
21 Travel	29		29
22 Trans of Things	8		8
23 Rent, Comm & Util ...	40	2	42
24 Printing			
25 Other Services	58		58
26 Supplies & Materials ..	44	7	51
31 Equipment	30	2	32
41 Grants			
TOTAL	<u>\$773</u>	<u>\$81</u>	<u>\$854</u>

Analysis of Increase

Pay Increase	42
Program	39

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Research Support (4 positions; \$28,000). Immediate needs include two game wardens to protect valuable land provided by the Canal Zone Government in Gatun Lake (\$9,000). In addition, a minimum operating crew, a captain and a mate (\$12,000), and operating costs (\$2,000) are sought to man surplus Navy vessel converted to scientific use at little cost to the Smithsonian. To help cover shortages in scientific support funds throughout STRI, additional funds (\$5,000) are requested for supplies, materials, and equipment.

Program and Facilities Management (2 positions; \$11,000). Because of increased costs of facilities utilization and maintenance two custodians are requested (\$7,000), along with support funds for general maintenance supplies, materials, and equipment (\$4,000).

An SAO research group now working on the frontiers of theoretical physics and quantum mechanics has developed complex computer programs for constructing mathematical models of basic atomic and molecular processes. This group anticipates an increased demand for producing the solutions to theoretical problems arising from the study of terrestrial, planetary, and stellar atmospheres, and from interstellar matter. During FY 1973, these vital efforts that contribute so broadly to the pursuit of astronomy will require the addition of a physicist and increased computer services.

--Energetic Phenomena in the Universe The history of modern astronomy is substantially the history of opening new windows on the universe. For centuries, the only window open to man was visible light--an extremely narrow band of the electromagnetic spectrum. In the past three decades, however, rapid advances in science and technology have opened many new windows utilizing radiation in the form of radio, infrared, ultraviolet, X-ray, and gamma ray signals. As befits a major observatory, SAO actively acquires data in most of these regions of the electromagnetic spectrum. Its plans for FY 1973 particularly call for emphasis upon two new areas. The first is infrared astronomy. The other is a window in the millimeter-wave region of the spectrum that has become useable only recently by virtue of instrumentation advances. This newest window lies between the longest wavelength of infrared radiation and the shortest wavelength of radio waves, a region in which many molecules in interstellar space are known to radiate.

Intense sources of infrared radiation have been detected at the core of many galaxies, including our own Milky Way. Indeed, some astronomers have found this radiation so powerful that an unknown form of energy release must be postulated to explain it. Some of this infrared radiation can be observed and analyzed by ground-based instruments such as the Multiple Mirror Telescope that SAO is fabricating. However, the longer wavelengths of the infrared spectrum are absorbed by the earth's protective blanket of atmosphere. This infrared radiation can be seen only by instruments in satellites, rockets, or balloons above most of the earth's atmosphere.

Because space satellites are so expensive and rockets so limited in their time of flight, SAO has developed a small but expert team skilled in preparing experiments for balloon flights. Today's modern balloons are capable of carrying large, intricate instrumentation that can be easily monitored and controlled from the ground. Far less costly than satellites, and far more productive than rockets, balloon experiments promise to provide an important means to astronomical discovery in this decade.

In cooperation with the University of Arizona and Harvard College Observatory, SAO has built a 40-inch infrared telescope for balloon-borne observations. The first flight is scheduled for late FY 1972, with more detailed investigations of specific objects of scientific interest scheduled for FY 1973.

To pursue millimeter-wave astronomy, SAO is engaged in a cooperative program with Harvard College Observatory, the University of Texas, and Bell Laboratories. This group is establishing a small millimeter-wave telescope at a site in Texas. Observations will begin during the latter half of FY 1972.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

1971 Actual	\$639,000
1972 Appropriation.....	\$762,000 <u>1/</u>
1973 Estimate.....	\$854,000

Established 25 years ago to foster understanding of the tropical environment as preserved on Barro Colorado Island, the Smithsonian Tropical Research Institute (STRI) has become a major center for research by staff, advanced students, associates, and visiting scientists on organisms and environments. The tropical location of STRI is particularly important for several reasons. The tropics are the habitat of one half of mankind. They provide unusually favorable opportunities for analysis of fundamental biological problems of world-wide significance. In the tropics, plant and animal diversities and biomass are greater. Competitive processes and interactions, are more complex. New lines of adaptation are more pronounced (and probably more often successful). Continuous year-round field and experimental studies are easier by far than in other climatic zones.

The Panama-Canal Zone region offers a unique array of terrestrial and marine study habitats. The Isthmus is a land bridge for the biotic interchange of two continents and, at the same time, a continuing barrier to the biota of two oceans--separated by several millions of years, but only 50 miles apart. This affords an observational and experimental potential which cannot be matched elsewhere. The interdependence of ocean and continent is beginning to be publicly recognized. STRI has one of the few teams of scientists in the world organized jointly to pursue the biology of both realms.

Questions of survival, importance of diversity, the role of animal communications, influence of environmental change, invasions by new populations, partitioning of environmental resources on land and in the oceans--on these and many other fronts STRI progress is recognized by leaders in biology around the world. The quality of STRI research can be readily verified by reviewing publications in the world's leading biological journals. In FY 1971 the ten permanent biologists published 29 articles. Non-permanent staff members contributed 32 publications. Many others were written by visiting scientists based on work at STRI. Twenty-eight seminars were given at STRI in FY 1971.

The growth in visitors to STRI is testimony to its role in research in the tropics. In FY 1971, 795 men and women from 55 universities and 47 other institutions in 24 states and 20 countries mined the intellectual and environmental resources at STRI. STRI operates four installations in the Canal Zone, including the long established and famous reserve of Barro Colorado Island. These are bases of studies of rain forests and lowland habitats, lakes and streams, the oceans, and the seashores. A fifth installation is operated in Cali, Colombia, for studies of montane forests and the rich biota of the upper Amazonian basin. Concurrent and comparative individual research projects elsewhere in the New and Old World tropics are providing data on regional variations. Work is underway on interactions among hundreds of different animals and plants and their habitats.

An increase of \$39,000 is requested to maintain a balanced program of research and facilities management to keep pace with the accelerating demands on the Institute. In addition, \$42,000 are sought to cover necessary pay for staff.

1/ FY 1972 appropriations adjusted by funds lapsing in 1972.

Need for Increase1. Research Support (4 positions; \$28,000)

In 1972 STRI obtained a long-term, no cost lease to three points of land in Gatun Lake directly across from Barro Colorado Island. These areas will permit research in secondary growth, which is not available on Barro Colorado Island, at a location easily accessible from the island facilities. They will also provide an area for collection of animals for study or for use by research institutions in other countries. Such collecting is not permitted on Barro Colorado Island. In view of the additional areas which must be patrolled, and of the increased pressure from poachers due to higher population densities in areas close to Barro Colorado Island, it is absolutely necessary that two additional game wardens be employed. The cost will be \$9,000.

The marine programs at STRI are made economically feasible through the use of surplus vessels converted for scientific purposes. Minimal amounts are necessary to put these valuable resources to work. The cost of a minimum crew, a captain and a mate, is requested (\$12,000). Operating costs which cannot be absorbed are \$2,000.

Increased prices of scientific supplies and equipment have affected STRI's ability to provide adequate support funds for the ongoing projects of its professional staff. For FY 1973, \$5,000 are requested to reestablish purchasing power within the base.

2. Program and Facilities Management (2 positions; \$11,000)

Increased usage of the station has finally dictated that a full time custodian be employed. The heavy visitor use of STRI by staff and visiting researchers requires that considerable maintenance and cleaning of facilities must be carried out. The employment of 2 additional laborers will be mandatory. Deficiencies in maintenance service can be corrected only by this small increase in staff. The cost of these two positions is \$7,000. In addition, utilities continue to rise, and there is a shortage of support funds for administrative supplies and materials; \$4,000 are requested to partially rectify these shortages.

RADIATION BIOLOGY LABORATORY

No. of Perm Pos	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
	<u>46</u>	<u>2</u>	<u>48</u>
11 Pers Comp	\$496	\$ 48	\$544
12 Pers Benefits	42	4	46
21 Travel	8	2	10
22 Trans of Things	3	1	4
23 Rent, Comm & Util ...	350	10	360
24 Printing	3	1	4
25 Other Services	86		86
26 Supplies & Materials ..	40	4	44
31 Equipment	120	111	231
41 Grants			
TOTAL	<u>\$1148</u>	<u>\$181</u>	<u>\$1329</u>

Analysis of Increase

Pay Increase	26
Program	155

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Temperature Control (\$111,000 support funds). The Laboratory has a phased plan for completing the outfitting of the building. A complete prototype room and design for the building-wide requirements for sophisticated temperature control are being carried forward during the current fiscal year. The plan calls for purchase and installation of the temperature apparatus throughout the building in FY 1973. Requested funds for outfitting the facility with the balance of the control elements (light, humidity, etc.) will follow in FY 1974 and FY 1975.

Instrumentation and Technical Support (2 positions; \$26,000). The technical support section is responsible for servicing and producing instruments required by the Laboratory's scientific staff. With the resumption of normal research activities, and the increasing need for complex systems, the present staff cannot keep abreast of workload requirements. An instrument specialist and an engineering technician are urgently needed (\$26,000).

Utilities and Other Support (\$18,000). Increased utilization and prices are anticipated. Much of the increase in utility costs will be due to making operational the natural light, glass environmental facility and the prototype controlled growth room. The request will serve to prevent erosion of the program base for FY 1973.

RADIATION BIOLOGY LABORATORY

1971 Actual	\$ 954,000	
1972 Appropriation ...	\$1,137,000	<u>1/</u>
1973 Estimate	\$1,329,000	

Light is a key environmental controlling factor for the development and growth of biological systems. The storage of solar radiation as chemical energy in photosynthesis is basic for all life on earth. However, the utilization of radiant energy and stored chemical energy is regulated by subtle changing signals of light quality, duration, and intensity. A primary objective of the Laboratory's efforts is to explain the influences of the various factors in the environment--light, temperature, humidity, and atmospheric content--on the growth and development cycles of plants and to characterize the mechanisms through which environmental signals eventually manifest their effects on the developmental processes in living organisms. This is accomplished by studying the problems in the Laboratory under controlled conditions using biochemical, biophysical, and physiological techniques and then verifying the importance of these processes in nature by monitoring the natural, dynamic environment. Such programs of research by their very nature are long-term and require the concerted team efforts of many scientific disciplines.

The research of the Laboratory consists of three principal areas: (1) regulatory biology, (2) environmental biology, and (3) carbon-14 dating. From the initial charge that it be concerned with the effects of the sun's energy on earth's life, a major portion of the program of the Radiation Biology Laboratory is devoted to the study of the responses of living organisms to various qualities and intensities of radiant energy.

Since its inception in 1928 the Laboratory has pioneered research on the influences of the spectral quality of visible light on plant growth and development. The present experimental program is of greater scope than in any other single laboratory in the country and perhaps the world. The complexity of the problems studied is demonstrated by the number of disciplines within the program, which has a range through physiology, cytology, biochemistry, biophysics, physics, engineering, electron microscopy, and morphology. The Laboratory has been credited with major contributions in the field of photobiology.

Over the next few years, the primary program and budgetary objectives of the Laboratory are to complete the instrumentation and equipping of the new Rockville facility, with compatible growth in the scientific and technical areas of investigation. In FY 1973, \$155,000 are requested to purchase and install the refined temperature control apparatus needed throughout the building, to provide needed support for the instrumentation section, and to meet increased utility and maintenance costs associated with higher prices and greater utilization. In addition, \$26,000 are being sought for necessary pay for staff.

Need for Increase1. Temperature Control (\$111,000 support funds)

The Laboratory has a planned phased program for completing the relocated facility. The current funding level does not permit purchase and installation of controlled light growth room facilities or sophisticated temperature control apparatus throughout the building's treatment and preparation rooms. The

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

present plan calls for the installation and finishing of one of five prototype controlled growth rooms during FY 1972-73, which will be adjacent to the glass enclosed natural light growth area. The completion of the facilities is proceeding with about \$69,000 available in the base; approximately \$9,000 is being utilized for the design of the building-wide temperature requirements; and \$60,000 for the control elements in the prototype room. Purchase and installation of the building-wide temperature apparatus must occur in FY 1973, and \$111,000 is sought for this purpose.

Each of the five controlled light rooms requires precision control of light quality, intensity and duration, relative humidity, gas content, and temperature. In addition to temperature control, the outfitting of each will require an insulated shell, some humidity and gas exchange equipment, and lighting units capable of simulating subtle changes in spectral quality and photoperiods of natural daylight. Once the temperature control schedule has been met, it is anticipated that funds to finish the instrumentation and outfitting of the four additional control rooms will be sought over a two-year budget period beginning in FY 1974 and will involve about \$200,000 a year for equipment purchase and installation.

2. Instrumentation and Technical Support (2 positions; \$26,000)

The initial move to the Rockville site occurred in FY 1971. During the current fiscal year, the on-going research programs have been resumed and operations returned to normal. To begin to meet anticipated requirements of the research staff and effectively utilize the new quarters, the operational plan calls for a phased strengthening of the instrumentation and technical support staff. To produce instrumentation currently required in the regulatory and environmental programs, the Laboratory is deficient one instruments specialist and one engineering technician, (\$26,000).

Regulatory biology research in this Laboratory has produced significant information toward the understanding of fundamental photobiological processes and mechanisms. It has been shown that neurospora, a fungus, synthesizes carotenoids (yellow to red pigments found in plants) in the presence of light. One of these carotenoids is the precursor of Vitamin A, required for human vision. Radiation Biology Laboratory investigators have isolated neurospora mutants that cannot synthesize carotenoids. Present experiments using these mutants are outlining the pathways by which ultraviolet light controls synthesis. This laboratory group was also the first to isolate successfully and characterize a functional photosynthetic pigment complex in red algae, which as a primary absorber of solar energy, enables organisms to grow at great depths in the ocean.

The solar radiation program has produced the only available long term data on ultraviolet light measurements. This information was used by a Department of Commerce panel evaluating the impact of the SST program on the environment. The Point Barrow, Alaska station provides the solar radiation data for the Tundra Biome program of the U.S. International Biological Program.

3. Utilities and Other Support (\$18,000)

Greater utilization and price increases in utilities are anticipated. The request will serve to prevent erosion of the program base of operations for FY 1973. When the glass enclosed natural light growth area, and the prototype controlled light area are operational, utility costs will increase (about \$10,000). The balance of the request will provide needed supplies, chemicals, and transportation funds.

OFFICE OF ENVIRONMENTAL SCIENCES

	<u>Base</u> <u>1973*</u>	<u>Increase</u> <u>Requested</u>	<u>1973</u> <u>Estimated</u>
No. of Perm Pos	<u>39</u>	<u>3</u>	<u>42</u>
11 Pers Comp	\$538	\$ 51	\$589
12 Pers Benefits	45	4	49
21 Travel	27	1	28
22 Trans of Things			
23 Rent, Comm & Util ...	14		14
24 Printing			
25 Other Services	63		63
26 Supplies & Materials ..	43		43
31 Equipment	44		44
41 Grants			
TOTAL	<u>\$774</u>	<u>\$ 56</u>	<u>\$830</u>

Analysis of Increase

Pay Increase	16
Program	40

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Chesapeake Bay Center(2 positions; \$27,000). The Center is participating in a broad study of how to scientifically manage, and maintain ecological balance, in a large land-water (estuarine) system. The initial focus of the study is the Rhode River watershed. Funds are needed for a program assistant to coordinate activities (\$19,000). In addition, the scientific utilization of the facilities has increased and requires an additional secretary (\$8,000).

Oceanography and Limnology Program(1 position; \$13,000). Two oceanographic research vessels are operated from PL 480 funds and private sources for biological and geological studies. Scheduling and other vessel operations require an additional program specialist (\$12,000), and support funds (\$1,000).

OFFICE OF ENVIRONMENTAL SCIENCES

1971 Actual.....	\$619,000	
1972 Appropriation	\$762,000	<u>1/</u>
1973 Estimate	\$830,000	

The broad role of the Office of Environmental Sciences is to integrate the land, freshwater, and marine research interests of the Smithsonian into cooperative scientific activities with other U.S. and foreign scientists. Comprehensive individual projects, some involving hundreds of investigators, are formulated by scientific authorities who identify significant problems based on known needs. In almost every case, participating scientists are supported by their own institutions. For example, 350 scientists from some 200 organizations receive marine specimens and coordinate their data production through the Smithsonian Oceanographic Sorting Center. At the request of the Agency for International Development, 50 scientists from nearly as many universities and agencies are developing guidelines that will enable foreign aid administrators, planners, and economists to predict the environmental consequences of major development projects in five underdeveloped countries. Twelve scientists in another activity are producing keys to freshwater organisms of significance to water quality studies.

The Office participates actively in national and international oceanographic and terrestrial expeditions. It reviews programs and renders advice on environmental matters to many agencies and universities, including the National Oceanic and Atmospheric Administration, Army Corps of Engineers, Environmental Protection Agency, Council for Environmental Quality, Department of the Navy, University of Rhode Island, Woods Hole Oceanographic Institution, and a number of philanthropic foundations supporting research in marine and terrestrial ecology.

A program increase of \$40,000 is requested for FY 1973 for environmental research, technical support, and maintenance of the Chesapeake Bay Center for Environmental Studies, and for the direction and supervision of the aquatic and terrestrial scientific programs of the Office. In addition, an increase of \$16,000 is requested for necessary pay.

Need for Increase

1. Chesapeake Bay Center (2 positions; \$27,000)

The Chesapeake Bay Center is a 2,000 acre natural and semi-natural area located seven miles south of Annapolis, Maryland. It is the largest facility in the nation available for the study of land-water (estuarine) systems. Through the Center, the Smithsonian is participating in the Chesapeake Research Consortium, Incorporated, a non-profit organization devoted to researching the environmental problems of biological populations, communities and ecosystems, and scientific land management. Other members of the Consortium include the University of Maryland, Johns Hopkins University, and the Virginia Institute for Marine Sciences. A major activity at the Center for the next several years will be to undertake land-water studies related to the model watershed development of the Rhode River. Studies will involve land use planning to demonstrate that environmental quality can be retained while avoiding the undesirable elements of a rapidly urbanizing complex. The movement of fertilizers, herbicides and pesticides, and the effects of soil erosion and estuarine sedimentation, as well as

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

the role of marshes as filter mechanisms will be studied. The influences of these phenomena on the land, living systems, and estuary are studies that may result in suitable control measures applicable to other areas. A recent National Science Foundation grant to six cooperating universities, totaling about \$128,000, will enable approximately seventy-five scientists working on eighteen different projects to utilize the Center facilities for work of this nature. Some of the projects have already started. Interest in the scientific potential of the Center is growing rapidly, and it is anticipated that in a few years the Center will be recognized as the major focus for promoting land-water ecological investigations. The present staff of five persons is hard pressed to handle the volume of inquiries, schedule the scientific use of the Center, and administer its various programs.

For FY 1973, a program assistant and a secretary (\$27,000) are requested to help keep pace with the increasing workload.

2. Oceanography and Limnology (1 position; \$13,000)

The Oceanography and Limnology Program operates and administers the Smithsonian Oceanographic Sorting Center in Washington, D. C. with federal funds, and the Mediterranean Sorting Center in Tunisia with foreign currency funds. Other activity in FY 1971 and FY 1972 includes the refurbishing of two oceanographic vessels and the completion of a research submersible using PL 480 and private funds. Provision of scientific direction through this program will enable nearly 100 scientists to engage in extensive oceanographic work. In FY 1973 the increased activity will require additional personnel for administering the program.

The biological control of non-agricultural pests is studied in the United States, Peru, Iran, Thailand, Laos, Ghana, and other countries. A notable achievement during the past year involved a Smithsonian parasitologist working in the Lower Mekong River. His work was partially supported by this Office. While there, he successfully identified the particular species of aquatic snail which serves as intermediate host to the schistosome infecting the Mekong. Studies are continuing to find a natural predator which may be introduced to control the snail before dams and man-made lakes in the Mekong and its tributaries lead to an irreversible spread of schistosomiasis to epidemic proportions in the Delta region.

A program specialist (\$12,000) is required for the Oceanography and Limnology Program to accommodate the increased activity and scheduling workload projected with vessel operations and research. Other program support, particularly travel, should be increased by \$1,000.

NATIONAL AIR AND SPACE MUSEUM

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>44</u>	<u>20</u>	<u>64</u>
11 Pers Comp	\$575	\$215	\$790
12 Pers Benefits	49	17	66
21 Travel	14	2	16
22 Trans of Things	5	8	13
23 Rent, Comm & Util ...	3		3
24 Printing	5	1	6
25 Other Services	24	194	218
26 Supplies & Materials ..	17		17
31 Equipment	58	40	98
41 Grants			
 TOTAL	 <u>\$750</u>	 <u>\$477</u>	 <u>\$1,227</u>

Analysis of Increase

Pay Increase	12
Program	465

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

The target year 1976 has been selected for the opening of the new Museum as an important contribution to the American Bicentennial celebrations. In FY 1973, this will require major operational increases in the following:

Exhibitions Planning and Artifact Restoration (10 positions; \$105,000). To coordinate new exhibits planning and design with outside consultants, the Institution's production shops and curators, and to begin to restore 32 major air-and spacecraft.

Professional and Curatorial Research (5 positions; \$75,000). To strengthen simultaneously, in a phased fashion, the Museum's ability to provide expert curatorial guidance and documentation required for the major exhibit and associated display areas.

Spacearium (3 positions; \$27,000). To complete work on exhibits project initiated in Air and Space Building in FY 1971, and designed for transport to new Museum when opened. The Spacearium should be opened to public in present quarters in late summer 1972.

Information and Education (2 positions; \$22,000). To establish a core education and information program directed at Washington area school systems.

Non-Personnel Support (\$236,000). To be utilized in above areas for Spacearium equipment, contracts for outside artifact restoration, exhibit consultants, and general program strengthening.

NATIONAL AIR AND SPACE MUSEUM

1971 Actual	\$ 631,000
1972 Appropriation.....	\$ 738,000 <u>1/</u>
1973 Estimate	\$1,227,000

By Act of August 12, 1946, the Congress established the National Air Museum as part of the Smithsonian Institution. Later by Act of July 19, 1966, the memorialization of space flight was added to its responsibility and the name changed to the National Air and Space Museum (NASM). The functions of the Museum are to memorialize the national development of aviation and space flight; collect, preserve, and display aeronautical and space flight equipment of historical significance; and serve as a repository for documentary materials.

In FY 1972, the Congress appropriated \$1.9 million for the redesign of the National Air and Space Museum building. This is to be constructed on the Mall and opened to the public in 1976 as part of the American Bicentennial Celebration. The building will host over 5 million visitors a year, and will serve as the national focal point for the collection, exhibition and historical research of aviation and space flight. The building will also house a planetarium/spacearium, which is planned to be a domed audio-visual facility in which dynamic pictorial simulation of the stars as seen from the earth or space can be blended with still and cinematic portrayals of launch, rendezvous, planetary landing and exploration. Presentations will range from conventional planetarium demonstrations to simulations of major space events. (Further information on the building plans may be found in the construction section of this budget presentation.)

To maintain the current level of operation in the Arts and Industries building and temporary Air and Space building, and at the same time prepare for the opening of the new museum, it will be necessary to increase the NASM operational budget by \$465,000 in FY 1973 (including 20 positions and \$229,000). In addition, \$12,000 are requested for necessary pay increases. The pace of exhibits preparation required to meet the 1976 opening date makes it imperative that the phased research and restoration work be started in FY 1973. The increase will be used to strengthen the NASM operation as follows:

Need for Increase1. Exhibits Planning, Artifact Preservation, Restoration and Storage (10 positions; \$105,000)

The present staff is hard pressed to keep up with the work at hand. Currently, there are 42 aircraft, 50 large space artifacts and 100 engines in the outdoor storage. All of this material must be sorted, identified, preserved and warehoused. New material arrives weekly.

Three new positions (\$39,000) are of high priority, and are essential in the area of planning and design of exhibits. They include a designer, artist, and typist. These people will provide the initial museum focus for conceptualizing and modeling the exhibits areas of the new building, and coordinating the necessary work that must occur among the NASM curatorial staff, the restoration and preservation elements at Silver Hill, the outside exhibits contractors and specialists, and the exhibit production capabilities of the Institution.

Exhibits in the new building will incorporate the use of 50 major air and space craft. Of this number it will be necessary to restore 32, or an average of eight per year over the next four years. Past records show that each major

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

artifact requires an average of 3 man years to restore. Therefore, in addition to the normal receipt, preservation, and storage workload for the entire collection, it will require about 24 employees for artifact restoration specially oriented to the exhibit collection. This work must be started in FY 1973 for completion in time for the 1976 opening. Seven new positions at a cost of \$66,000 for the restoration process are requested. Of this total, five will be at the GS-7 and below, and two will be at the GS-9 level. The recruitment of lower graded personnel is possible because of the number of skilled mechanics already on the rolls. By recruiting at the lower levels it will be possible to utilize more effectively the present staff in the performance of restoration work and place the new personnel in laboring, warehousing, and support positions.

2. Professional and Curatorial Activities (5 positions; \$75,000)

The curatorial demands for the new museum will require a steady growth in the professional staff between now and the opening of the new museum. Current plans call for approximately 60 major and minor display units ranging in content from Lindbergh's flight to space biochemistry. Experience shows that a major exhibit requires 4-6 months to conceptualize. This includes the research and development of scripts, and the search, both in-house and outside, for appropriate artifacts. In FY 1973, it will be necessary to increase the curatorial staff by four professional staff members and one support staff member. One of the new professional staff positions will be a department chairman. The remaining three curatorial positions will be filled by specialists in fields related to the artifacts to be displayed, and historical research to be performed in the new building, i.e., human factors, propulsion, and electronics.

3. Spacearium (3 positions; \$27,000)

FY 1971 saw the beginning of the development of the Spacearium. Plans were drawn up whereby this project would be housed over the next three years in the present Air and Space building. This project provides a testing ground for equipment and exhibit techniques and will be transferable to the new building. At the same time it will give the millions of visitors to the present Air and Space Building an educational as well as entertaining exhibit and a preview of an important component of the new museum. The project is being further developed with FY 1972 funds. It is requested that \$25,000 be made available in FY 1973, to provide the salaries for three support personnel responsible for the audio-visual and electro-mechanical functions of the spacearium.

4. Information and Education (2 positions; \$22,000)

It is requested that \$22,000 be made available to provide the salaries for an information education specialist and a clerk typist. These positions are necessary to utilize NASM facilities, staff, and artifacts to establish an education and information program directed toward the Washington area school systems with emphasis on those young people living in the inner-city.

5. Other Support Funds (\$236,000)

An amount of \$236,000 is requested for support of programs directed toward the move into the new museum. This will be used for a variety of purposes: contracts for restoration of selected aircraft and space craft (\$120,000); contracts for exhibit consultants and temporary employees to be used on a flexible basis rather than hiring full-time staff (\$60,000); equipment including requirements for the spacearium (\$40,000); and other necessary support for travel, transportation, publication, and other expenses (\$16,000).

CENTER FOR THE STUDY OF MAN

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>10</u>	<u>3</u>	<u>13</u>
11 Pers Comp	\$ 85	\$ 41	\$126
12 Pers Benefits	7	4	11
21 Travel	12		12
22 Trans of Things			
23 Rent, Comm & Util ..	2		2
24 Printing			
25 Other Services	98	7	105
26 Supplies & Materials ..	1		1
31 Equipment	1		1
41 Grants			
TOTAL	<u>\$206</u>	<u>\$ 52</u>	<u>\$258</u>

Analysis of Increase

Pay Increase	4
Program	48

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

American Indian Program - Encyclopedia of North American Indians (3 positions; \$48,000). The Encyclopedia of North American Indians is out of the planning stage and into production. In 1971 a meeting with the General Advisory Committee took place. Plans were reviewed and volume editors selected. The scope and contents were established, and meetings of volume editors with their respective advisory committees were completed. Writing has started and some manuscripts have already been received. The efforts of over 850 contributors are being coordinated and first drafts of all manuscripts will be received during FY 1973. The workload has been increasing rapidly and three additional personnel are requested, copy editor, a bibliographer, and an illustrator (\$41,000). Other support funds for the expenses of volume editors and contributors are requested (\$7,000).

CENTER FOR THE STUDY OF MAN

1971 Actual	\$153,000
1972 Appropriation.....	\$204,000 1/
1973 Estimate	\$258,000

The Center for the Study of Man coordinates research and development on a series of important anthropological programs. The American Indian Program is presently concerned primarily with the development of the 20 volume Encyclopedia of North American Indians. Another aspect of this program is the development of a system for providing scholarly educational materials concerning Indians to individuals, schools, and Indian communities. In addition, the Center helps to coordinate educational intercommunication among Indians themselves, with scholars, and with appropriate government and private agencies.

The Urgent Anthropology Program identifies, publicizes, and finances, by means of small grants, needed research in geographical areas that are undergoing rapid environmental change as a result of urbanization, improved communications, better transportation, and other factors. The objective is to salvage and preserve information in selected rapidly changing areas before time and events erase our ability to understand the cultures that existed.

The Cross-cultural Data Retrieval Program is coordinating the efforts of numerous anthropologists and other human scientists in developing new, comparative information on population, environmental, and educational studies. As the results of these studies begin to appear in monographs, the Center will undertake to interpret them for the general public through an exhibits program.

A program increase of \$48,000 is requested for FY 1973 for continued development of the Encyclopedia of North American Indians. In addition, \$4,000 are sought for necessary pay for staff.

Need for Increase1. Encyclopedia of North American Indians (3 positions; \$48,000)

The purpose of the Encyclopedia, consisting of 20 volumes, is to summarize what is known of the prehistory, history, traditional, and modern cultures of all the Indian groups north of Mexico. The volumes will bring up to date and replace the previous standard encyclopedic work of this topic which was issued by the Smithsonian in 1907-1910. This will become the standard reference work on all aspects of North American Indian history and anthropology. It will be heavily used by students, teachers, authors, researchers, and administrators in both the United States and foreign countries.

The project is proceeding according to our original time table. The schedule of completed and planned activity is as follow:

May 1971--writing assignments given to approximately 850 contributors;
 May 1972--completed draft manuscripts received;
 May 1973--revised and reassigned manuscripts completed;
 May 1974--submission of manuscripts for the 20 volumes to the printer;
 July 1976--issuance of the Encyclopedia as part of the American Revolution Bicentennial celebration.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

Some manuscripts have already been received, more will begin to arrive in late FY 1972, and by FY 1973 they will be coming in large numbers. The requested additional funds will be used to hire a copy editor, a bibliographer, and an illustrator-draftsman (\$41,000), and to pay for the expenses of volume editors and contributors (\$7,000).

As the flow of work effort on the Encyclopedia becomes stabilized and routinized, the Center will begin to turn more attention to other important projects. One such project is the study and conservation of American Indian languages.

For nearly a century research on American Indian languages has been a responsibility of the Smithsonian. The Institution is generally regarded to be the center for such research. It is assumed that such research is now being conducted but there has not been a linguist on the Smithsonian staff since 1970. In the past, a significant proportion of the research and publication on Indian languages was conducted by Indians - native speakers of the languages concerned - both on the Smithsonian staff and elsewhere. In recent decades there has been a marked decrease in the number of Indian linguistic scholars. Yet linguists agree that important advances in their science depend upon the knowledge which a native speaker brings to bear in the study of his own language. American Indian languages have a great deal to contribute to our understanding of languages in general. In order to ensure that this contribution will be made, it is essential that a significant number of American Indians be enabled to engage in the study of their own languages. In recent years there has been parallel growth in awareness in Indian communities of the importance and value of Indian languages and in the necessity for their formal study and teaching. The interests of the Institution and of Indian communities coincide. Awareness of this shared interest has begun to be evident. Tribes whose members are known to be interested in research and training in their language include the following. This number will increase.

<u>East</u>	<u>Midwest</u>	<u>West</u>
Passamaquoddy	Crow	Navajo
Miccosukee	Cree (Rocky Boy)	Eskimo
Mohawk	Sioux	Tlingit
Cherokee	Cheyenne (Northern)	Hupa
Choctaw	Chippawa	Diegueño
Micmac		Luiseno
Penobscot		Cupeño
		Keresan
		Pomo
		Ute
		Makah

To meet this need, the Smithsonian is planning a long-term program to support research on North American Indian languages at the local level and mainly by linguists who are themselves native speakers of the languages. On the basis of initial inquiries and correspondence, the program will consist of: (1) assistance for training of native Indian linguists; (2) the preparation of materials on the native languages, which would be useful for the teaching of literacy and literature, and for the continued use of Indian languages in education beyond the elementary level; (3) the preparation of accessible linguistic resource materials on these languages for future use by both American Indian communities and the scholarly world.

CENTER FOR SHORT-LIVED PHENOMENA

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	3	0	3
11 Pers Comp	\$25	\$1	\$26
12 Pers Benefits	2		2
21 Travel	1		1
22 Trans of Things	2		2
23 Rent, Comm & Util ...	24	4	28
24 Printing	12	2	14
25 Other Services	8	3	11
26 Supplies & Materials ..	8	1	9
31 Equipment	1		1
41 Grants			
TOTAL	<u>\$83</u>	<u>\$11</u>	<u>\$94</u>

Analysis of Increase

Pay Increase	1
Program	10

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

World-Wide Natural Event Monitoring and Reporting (\$10,000). Over the past four years, the Center has reported over 400 ecological, geophysical, and astrophysical events occurring in 86 countries and all the world's oceans. Its reporting network has grown to 2,800 scientists and scientific field stations in 148 countries and territories. Despite an enthusiastic response from federal agencies and the international scientific community, outside financial support for regular, on-going operations is difficult to obtain. Special reporting projects are so funded and the Center has a subscription program which produces about \$25,000 a year. A program increase of \$10,000 is requested for communications, printing, computer services, and other operational costs. Much of this increase is associated with higher costs resulting from reporting significant environmental pollution events.

CENTER FOR SHORT-LIVED PHENOMENA

1971 Actual	\$ 67,000
1972 Appropriation.....	\$ 83,000 <u>1/</u>
1973 Estimate.....	\$ 94,000

The Center for Short-Lived Phenomena is an early alert system and clearinghouse for the reception and dissemination of information on short-lived natural events. The Center alerts scientists, agencies, and research institutions to major short-lived ecological, geophysical, and astrophysical events occurring anywhere in the world. It quickly communicates data and descriptive information on events such as large oil spills, major atmospheric and water pollution events, high biocide residue discoveries, massive fauna and flora mortalities, volcanic eruptions and major earthquakes, the birth of new islands, the fall of large fireballs and meteorites, sudden changes in biological and ecological systems such as animal migrations and colonizations, and any other natural or man-made phenomena that require rapid response from scientists in order that they may take advantage of research opportunities while environmental changes are occurring.

During the past four years the Center has reported over 400 short-lived events that occurred in 86 countries and all the world's oceans, including 189 earth science events, 142 biological and ecological events, 61 astrophysical events, and 9 urgent anthropological and archaeological events that led to 297 scientific field expeditions. The Center has issued over 1,300 event notification and information reports to thousands of research scientists and institutions, published 67 event reports, handled a communications volume of over half a million cable words, and a mail volume of 800,000 event notification and information cards.

An increase of \$10,000 is requested to meet higher costs of communications and other expenses. An additional \$1,000 are needed for necessary pay.

Need for Increase

Activities have continued to increase rapidly in the past two years because of the response from federal agencies and the international scientific community. At the urging of a number of agencies and international organizations, the Center has become involved increasingly in reporting significant environmental pollution events. Because of the Center's comprehensive global communications system and its reporting network that has now grown to over 2,800 scientists and scientific field stations in 148 countries and territories, the Center was able to report every major environmental pollution event, volcanic eruption, earthquake, oil spill, and meteorite fall that occurred on earth in 1971, usually within hours after the events occurred.

The Center has been successful in obtaining outside financial support for special projects dealing with global environmental monitoring and transient lunar phenomena. It has also instituted an event notification subscription program that now has over 600 subscribers and produces revenue of over \$25,000 per year, but the success of the Center's regular operations will depend heavily on the level of core federal funding.

The Center will begin no new activities in FY 1972 and plans none for FY 1973 that will use federal funds, but requests that FY 1973 federal support be increased to meet higher operational costs resulting largely from the Center's increased commitments in environmental pollution event information communication. An increase of \$10,000 is needed for communications, printing and reproduction, other services (computations and information systems support), and supplies and materials.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

NATIONAL ZOOLOGICAL PARK

No. of Perm Pos	Base <u>1973*</u>	Increase <u>Requested</u>	1973 <u>Estimated</u>
	286	0	286
11 Pers Comp	\$2759	\$ 72	\$2831
12 Pers Benefits	248	6	254
21 Travel	20	2	22
22 Trans of Things	3		3
23 Rent, Comm & Util ...	161	13	174
24 Printing	3	4	7
25 Other Services	64	49	113
26 Supplies & Materials ..	392	97	489
31 Equipment	170	19	189
41 Grants		1	1
TOTAL	\$3820	\$263	\$4083

Analysis of Increase

Pay Increase	78
Program	185

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Exhibits and Education Program (\$70,000). Although major improvements to displaying the large and varied collections of animals (now numbering some 3,200 animals of 1,100 species) must await the renovation of the Zoo, more immediate steps can be taken to produce educational exhibits that will identify and explain the collection. Funds are sought for contract design and fabrication of the kind of exhibits seen in modern zoos (\$40,000). An amount of \$30,000 is also requested for utilities and routine services, supplies, and equipment; a small program of assistance to foreign zoos; and for the training of Zoo employees.

Operations and Maintenance (\$27,000). These funds are sought to meet the increasing costs of building materials, gardening and tree maintenance supplies, and vehicle repair parts.

Zoological Programs (\$88,000). An amount of \$70,000 is needed to meet steadily rising prices of animal food and veterinary supplies. Uniforms and equipment for keepers and other personnel require an additional \$13,000. Funds are requested to cover the cost of contractual research projects and meeting page charges and other research publication costs (\$5,000).

NATIONAL ZOOLOGICAL PARK

1971 Actual	\$3,163,000
1972 Appropriation.....	\$3,762,000 <u>1/</u>
1973 Estimate.....	\$4,083,000

The National Zoological Park was established in 1889 for the "advancement of science and the instruction and recreation of the people." To accomplish this mission, the Zoo exhibits a broad zoological collection of animals from all parts of the world in natural surroundings; maintains an information and education program for the benefit of the visiting public from all over the United States; and promotes scientific research, including biomedical programs, for increased scientific knowledge and for the benefit of the animals so that visitors can enjoy them in prime health.

The number of visitors increases annually. In calendar year 1971, approximately 5,000,000 visited the Zoo. A significant number of these visitors are in organized school groups from the metropolitan area and more distant points. The Zoo is increasingly used as a teaching site by teachers of biology and other natural sciences.

Continued improvements have been made in the collection of animals, which is one of the world's largest. As the collection evolves, the Zoo will present exhibits of greater visitor interest and, at the same time, give greater emphasis to species and groups which effectively demonstrate significant points of animal adaptations and behavior. Greater emphasis will be given also to increasing zoo births by pairing unmated animals and maintaining breeding groups. Not only is this good conservation practice; it is essential in view of the increasing scarcity of many species and the high prices that must be paid to acquire them.

The Zoo is organized in three departments: Office of the Director; Operations and Maintenance Department; and the Department of Zoological Programs.

For FY 1973, a program increase of \$185,000 is requested to meet the increased cost of operating items; to establish a grant fund to assist foreign zoos; to provide for contracting design and fabrication of exhibits; and to provide funds for scientific publications. An additional \$78,000 are required for necessary pay increases.

Need for Increase1. Office of Director (\$70,000)

The office of the director plans and directs all Zoo programs. It also coordinates the activities and functions of the planning and design office; develops and maintains the Zoo's educational program; and furnishes general administrative services. The animal acquisition program is under the direction of this office. Administrative services include the protective service program, budget, fiscal, supply, and procurement functions.

The Zoo now has approximately 3,200 animals of over 1,100 species, representing one of the largest and most varied collections of exotic animals in existence. This collection has great public educational potential, in subjects such as wildlife conservation. Although major improvements to

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

displaying the animals must await the renovation of the Zoo, more immediate steps can be taken to produce the kinds of educational exhibits needed to identify and explain the living collection of animals to visitors. Cage exhibits thus far have been largely improvised by animal keepers, using branches, rocks, mosses, and other materials to meet the requirements of the animals for perching, climbing, privacy, shade, etc. In modern zoos, materials such as molded fiberglass are extensively used to simulate rocks, tree stumps, and plants. Contract design and fabrication of exhibits similar to those seen in visitor centers and at other points in national parks, as well as in many modern zoos will cost \$40,000.

The Zoo staff is frequently called on for assistance from foreign zoos and wildlife parks. Information is requested on conservation, diet, medical treatment, and many other technical subjects essential to proper animal care. There have been on-site consultations in many cases. Often these zoos, or their parent organizations, can meet the expenses of this assistance. This is not the case with regard to the several hundred zoos in underdeveloped countries. Use of the funds would be limited to supplement the advice and assistance that is now rendered to a few zoos. Examples of zoos helped in the past are in Accra and Kumasi, Ghana; Brasilia, Brazil; Santiago, Chili; and Surabaya, Indonesia. Funds are requested for the purchase of books, travel for consultation, and other expenses (\$1,000).

Funds are needed to finance training expenses of Zoo employees. This includes course fees, books, films, manuals, as well as other training materials for use in-house, and fees for individuals brought to the Zoo as specialists for in-house training courses (\$2,000).

Additional funds are also sought to meet the rising costs of utilities and routine contractual services, supplies, materials, equipment, and travel (\$27,000).

2. Operations and Maintenance (\$27,000)

The operations and maintenance department has responsibility for all plant maintenance and supporting services. These include:

--Maintenance and construction: maintaining and repairing 15 major buildings and a wide range of cages and other facilities. This unit also performs renovation and minor construction, and builds nest boxes, shipping crates, exhibits, and other needed items.

--Grounds: maintaining and improving the 156 acres of trees, lawns, shrubs, flower beds, and indoor plantings.

--Air conditioning and heating: maintaining all heating plants and air conditioning in the buildings throughout the Park.

--Transportation and automotive maintenance: maintaining all automotive vehicles, and operation of trucks and heavy equipment.

--Labor services: trash collection, sweeping of streets and walks, snow removal, and janitorial services.

An amount of \$27,000 is needed to meet the increasing costs of building materials, gardening and tree maintenance supplies, and vehicle repair parts.

3. Department of Zoological Programs (\$88,000)

The department of zoological programs conducts an animal care program involving feeding, cleaning of cages, and exhibition; an animal health program responsible for clinical treatment of illnesses and injuries; a pathology program that performs histopathologic and gross pathologic diagnosis of disease; and a scientific research program that undertakes studies of animal behavior, reproduction, and nutrition.

The Zoo collection is a major scientific resource. For this reason, facilities and assistance are often provided to scientists from federal agencies, such as the National Institutes of Health, as well as from universities. The Zoo's own scientific studies add to man's understanding of the living world. Investigations undertaken in the Zoo and in the field have yielded numerous scientific publications. In addition, the department is of assistance to other organizations, including foreign governments concerned with wildlife management and conservation. It also provides training and research opportunities for graduate students.

Additional funds are requested to meet steadily rising animal food prices, as well as to purchase veterinary supplies and other necessary items to maintain a healthy collection of animals (\$70,000). The replacement prices for sundry supplies, uniforms, and equipment also have risen sharply. Funds are also sought to cover the increased cost and usage of these items (\$13,000).

Funds are required to cover the cost of contracting various portions of research projects to professionals working with this institution. Rather than acquire permanent staff members, thus locking the scientific research program into a fixed pattern, it is desirable to retain flexibility by contracting with technical personnel for services performed as the need arises. Prior experience with research has indicated the desirability of such a flexible system. Some programs cannot be executed without the availability of funds for contracting services by professionals to perform certain preliminary stages of research which can then be taken over by permanent staff members (\$3,000).

Publications are costly. Most professional journals now charge page costs for publication and the demand from all professional journals to cover publication costs has increased. Since the scientific productivity of the National Zoological Park is increasing and, further, since it is desired to begin publishing technical manuals concerned with animal husbandry, funds are requested to cover costs of publication both within the Smithsonian Press and with respect to those articles sent to outside journals (\$2,000).

HISTORY AND ART

The Smithsonian possesses an unequaled array of resources, both material and human, for the understanding and illumination of our country's history through its material culture, its technology, and its art. No other Institution has a greater and more exciting opportunity to demonstrate and celebrate what Americans--all Americans--have accomplished.

As the custodian of National Collections comprising literally millions of historic objects and works of art, it is our responsibility to make sure that these collections are used as effectively as possible for the benefit of all. We must care for these collections, we must make them available to scholars both from our own staff and from the broader academic community, and we must use them intelligently and imaginatively to help tell the story of American civilization to our millions of visitors and, through publications and traveling exhibitions, to an even wider audience. It is also our responsibility to seek the continued growth of these collections. As we are the beneficiaries of the foresight of past generations, so must we be the benefactors of future generations, passing on to them the fruits of our stewardship.

With one exception, the Joseph H. Hirshhorn Museum and Sculpture Garden, the budget requests in the area of history and art are modest, reflecting our determination to fulfill our obligations and to realize our opportunities as economically as possible. The funds requested for the Hirshhorn Museum are required to equip and furnish the building when it is turned over to us by the contractor. Postponement of these non-recurring expenditures would inevitably delay the public opening of this great new museum.

Although many history and art bureaus of the Smithsonian have received no substantial increases in operating funds during the past two or three years, and although inflation has caused many of them to suffer in effect a decrease in funds, we have sought insofar as possible, to meet our needs out of existing resources. To this end, we have undertaken to terminate some activities and to reduce or redirect others drastically--for example, the International Art Program, the Smithsonian Journal of History, and temporary exhibition programs in all our museums. We shall continue to scrutinize all our activities with a view to maintaining a strong sense of priorities. At the same time, with the enthusiastic cooperation of our museum and bureau directors, we have encouraged cooperative efforts among our history and art bureaus in the name of efficiency and economy; shared library, photographic, and conservation facilities, for example, serve the National Collection of Fine Arts and the National Portrait Gallery better and more cheaply than would separate ones.

Despite these efforts, which will continue, certain real needs hamper the effective operation of many of our history and art bureaus and prevent us from deriving the full benefits from the investment that has been made in them.

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

	<u>Base</u> <u>1973*</u>	<u>Increase</u> <u>Requested</u>	<u>1973</u> <u>Estimated</u>
No. of Perm Pos	<u>157</u>	<u>6</u>	<u>163</u>
11 Pers Comp	\$1,944	\$84	\$2,028
12 Pers Benefits	160	7	167
21 Travel	49		49
22 Trans of Things			
23 Rent, Comm & Util ..	12		12
24 Printing	5		5
25 Other Services	112	123	235
26 Supplies & Materials ..	20	40	60
31 Equipment	167	50	217
41 Grants			
TOTAL	<u>\$2,469</u>	<u>\$304</u>	<u>\$2,773</u>

Analysis of Increase

Pay Increase	44
Program	260

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Computerized Inventory of the National Historical Collections (\$23,000). The approximately 16 million objects in the Museum's collection, ranging from postage stamps to a giant locomotive, make it essential to have a standardized inventory system permitting quick access for research projects, exhibition items, and to answer public inquiries. It is now nearly impossible to locate individual objects or to determine if certain classes of specimens are in the collections at all. Studies of various cataloging systems have been made and pilot project inventory of the collection of 4,000 handguns has been completed. An amount of \$23,000 is requested for program preparation and computer time to continue to develop a computerized, descriptive catalog of the Museum's holdings.

Prevention of Deterioration of Objects (3 positions; \$165,000). Several collection areas and many objects on display are badly in need of remedial action to prevent their deterioration and loss. Three museum technicians and funding of \$35,000 are requested to give particular attention to the numismatic collections, costumes and furnishings, and musical instruments. An amount of \$130,000 is sought to restore objects on display since 1964 (especially those which are subject to wear and tear in operating exhibits) and seen by some 42 million visitors.

Acquisition of New Objects (\$50,000). New objects of great historical importance will be acquired with the requested \$50,000. Of special importance to the Museum is the acquisition of patent models from the Gilbert Collection which document the range of American inventiveness during the 19th century. Otherwise, the models will be dispersed to private collectors and lost to the American people.

Curatorial Support (3 positions; \$22,000). Three additional clerk-typists (\$22,000) will be added to the Museum's staff to assist with curatorial duties and public inquiries.

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

1971 Actual	\$2,242,000
1972 Appropriation.....	\$2,428,000 <u>1/</u>
1973 Estimate.....	\$2,773,000

The National Museum of History and Technology occupies a unique position among the great museums of the world. As the repository of the National Collections documenting the historical and technological achievements of the American people, the Museum has responsibility for over 16,000,000 objects related to all facets of the American experience. Each of these objects must receive the highest level of professional care and preservation.

As the most visited museum in the world, it was host to almost 6,000,000 visitors during FY 1971. It is anticipated that this figure will double by the Bicentennial year, 1976.

As a center for the scholarly study of the history of American civilization and the history of science and technology, this Museum continues to support and encourage basic research and publication in many subject fields, ranging from early exploration to studies of contemporary American culture.

For FY 1973, an additional \$260,000 in program funds is requested for a computerized inventory of the national historical collections, the prevention of deterioration of objects in storage and on public view, the acquisition of new objects of historical importance, and for additional clerical support to the professional staff. An amount of \$44,000 also is sought for necessary pay for current staff.

Need for Increase

During the eight years since the NMHT opened to the public in 1964, it has endeavored to fulfill its responsibilities to the American people in a variety of ways.

It has provided a variety and richness of public exhibits seen by over 42,000,000 visitors, equal to 20 per cent of America's total population.

It has provided a steadily increasing range of exhibitions and public information services such as public lectures, concerts, tours, and responses to personal and written public inquiries.

Its collections have provided the historical documentation for countless scholarly monographs and general works of history, many of which have been produced by the Museum's own staff.

With the approach of the Bicentennial celebrations, even more attention will be focused upon the NMHT's unique collections of the nation's historical treasures. Citizens, visitors from abroad, scholars, researchers, and collectors will be drawn more than ever to the Museum.

While the responsibilities and contributions of the NMHT have grown substantially during its eight years of existence, its resources have not. Insufficient staff and funds have prevented the completion of the cataloging, preservation, and interpretation of the millions of invaluable objects in its collections. By providing more adequate care of donated and purchased materials, the Museum will continue to attract the important historical treasures which it must have to meet its responsibilities. A total of \$260,000 is requested to correct partially present Museum deficiencies.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

1. Computerized Inventory of the National Historical Collections (\$23,000)

A computerized, descriptive catalog of the Museum's collections is urgently needed and long overdue. Millions of objects were acquired before systematized methods of cataloging were developed. It is now nearly impossible to locate individual objects or to discern if certain classes of specimens are included in the collections at all. The number and diversity of the objects, ranging from postage stamps to a 140,000-pound electrical generator, makes it essential to have a standardized inventory of the Museum's resources. A fully computerized inventory system, a long range project, will permit the NMHT for the first time to reduce its present backlog of cataloging and to keep pace with current acquisitions. With adequate funding, the project can be completed within ten years.

Preliminary studies of various cataloging systems have already been made and a pilot project for a computerized, descriptive catalog of the collection of almost 4,000 handguns has been completed in FY 1971 and 1972 with funds in the base. With the \$23,000 requested for program preparation and computer time, the NMHT could expand its descriptive inventory to begin to encompass its entire collections.

2. Prevention of Deterioration of Objects in Storage and on Exhibit (3 positions; \$165,000)

In several collection areas, specifically numismatics, costumes and furnishings, and musical instruments, there is insufficient staff to provide adequate care to these priceless objects. Three museum technicians (\$25,000) are requested to prevent further deterioration in these collections, plus \$10,000 for supplies, including special storage cases compatible with existing equipment.

Another serious concern of the NMHT is the condition of many of the national treasures which have been on public view since the Museum first opened in 1964. Many objects have suffered considerably from public exposure, especially those which are part of operating exhibits.

At present the NMHT does not have resources to refurbish and recondition adequately these objects to a proper museum standard. In order to accomplish this task properly, the NMHT requests \$100,000 to contract for the restoration of important specimens on public display (to be done under close supervision of the curatorial staff) and \$30,000 for supplies and materials to allow for the restoration by highly trained museum technicians of specimens too valuable to be allowed to leave the Museum temporarily. If this project is not undertaken soon the restoration cost will be prohibitive.

3. Acquisition of New Objects (\$50,000)

An additional \$50,000 is requested to acquire new specimens of extraordinary historical importance to fill serious gaps in the collections. For example, there are in the Robert Gilbert collection of patent models a number of specimens which are a unique historical record, documenting in a vivid and dramatic way the range of American inventiveness during the nineteenth century. If individual models from the collections cannot be purchased in FY 1973, the models will be dispersed by sales to private collectors and this invaluable collection of objects will be lost to the American people. In recent years, funds for specimens (approximately \$300,000) have been diverted from regular operating funds. This is no longer possible in the face of generally increased costs of operations.

4. Curatorial Support (3 positions; \$22,000)

Three additional clerk typists (\$22,000) are requested to relieve professional staff from performing necessary clerical functions (such as typing responses to the thousands of public inquiries received each year).

NATIONAL COLLECTION OF FINE ARTS

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>72</u>	<u>6</u>	<u>78</u>
11 Pers Comp.....	\$ 817	\$ 77	\$ 894
12 Pers Benefits.....	69	6	75
21 Travel.....	31	5	36
22 Trans of Things.....	25	5	30
23 Rent, Comm & Util...	14	1	15
24 Printing.....	3	1	4
25 Other Services.....	146	58	204
26 Supplies & Materials..	26	31	57
31 Equipment.....	98	40	138
41 Grants.....			
TOTAL	<u>\$ 1229</u>	<u>\$ 224</u>	<u>\$ 1453</u>

Analysis of Increase

Pay Increase.....	24
Program.....	200

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Collection Management and Use (2 positions; \$55,000). The ability to acquire works of art in today's competitive market must be increased. While private donations are intensely cultivated, to an increasing extent valuable works are no longer available from donors; \$25,000 are requested to strengthen the purchase flexibility for collections. In addition, funds are requested for two positions (\$21,000), one to restore and conserve prints and drawings, and one to supervise the growing archival collections of photographs and negatives. Support funds for these efforts involve equipment and supplies (\$9,000).

Exhibitions (2 positions; \$99,000). The exhibit capability of the National Collection needs to be expanded over the next few years because of growing programs at the recently opened Renwick Gallery and the increasing demands for traveling exhibits. An exhibition specialist (\$8,000) and basic exhibits production support (\$70,000) are required to support the new program at the Renwick Gallery. In addition, with a projected 40% increase in workload for the traveling exhibitions program there is a great need for a specialist to mount exhibitions (\$11,000), and support funds (\$10,000) to help absorb increasing preparation and shipping costs.

Public Education (2 positions; \$46,000). Curriculum interest in art, printmaking, etching, etc., is growing rapidly in the local school system, and in addition to the structured tours, are bringing great pressure to bear on the current small staff (3) and available resources. Direct school contacts, exhibitions, course development, and training are of great importance to NCFA's operations. To handle scheduling, training, materials, and demonstration development, two education specialists are required (\$19,000) along with support funds (\$27,000).

NATIONAL COLLECTION OF FINE ARTS

1971 Actual	\$1,036,000
1972 Appropriation.....	\$1,212,000 <u>1/</u>
1973 Estimate	\$1,453,000

The National Collection of Fine Arts (NCFA), the oldest national collection of art, is devoted to the conservation, study, and presentation of American painting, sculpture, prints and drawings, and American design and crafts. It circulates exhibitions both throughout this country and abroad (in association with the United States Information Agency), maintains an active program of public education at all levels, engages in research and publication on American artists, and maintains (with the National Portrait Gallery) a laboratory for conservation and conservation research in American painting materials.

The requested program increase of \$200,000 is chiefly for the expansion of the traveling exhibition program to permit it to reach areas and institutions not now possible, for the exhibition of American crafts and design in the Renwick Gallery, opened in January 1972, and for the expansion of the very successfully launched program of public education in art. A part will allow for a small extension of the funds now available for the purchase of works of art. An additional \$24,000 are requested for necessary pay for existing staff.

Need for Increase1. Collection Management and Use (2 positions; \$55,000)

Although private donation continues to be a necessary and gratefully received source for the collection (gifts of art amounted in value to over \$350,000 in FY 1971), today key works for a proper presentation of United States art are often not available from donors. While there is no intention to duplicate holdings in other Washington collections, it is important that those areas of art best represented in the NCFA be as complete as possible. An increase of \$25,000 for purchase of works of art in FY 1973 is requested, making available a total sum of \$100,000 for purchases.

The conservation laboratory, which serves both the National Collection of Fine Arts and the National Portrait Gallery, needs a facility for the restoration and conservation of works on paper to care for the growing collection of prints and drawings. An assistant conservator specializing in paper is requested (\$9,000) and \$4,000 for outfitting the laboratory for this work.

Basic to NCFA's function as a center for the recording and study of American art is the archive of photographs and photographic negatives. The Juley Archive of some 150,000 negatives will shortly join the collection, in addition to the material from the Bicentennial Inventory of American Painting and from the continuing research project on government sponsored art of the 1930's. An archives technician is needed to put this material in order and to supervise the archive (\$12,000); \$5,000 are requested for initial equipment.

2. Program of Exhibitions (2 positions; \$99,000)

For the exhibition program of the newly opened Renwick Gallery, presenting historical and educational exhibitions on American design and craft, funds of

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

\$70,000 are required for FY 1973. These exhibitions, planned and installed by the staff of NCFA in close association with craft and design organizations throughout the country, serve both as introduction to United States accomplishments in this area and as education in the "visual language" of craft and environmental design. An exhibits specialist is needed for the Renwick to work in association with NCFA's department of exhibition and design (\$8,000).

The Smithsonian Traveling Exhibition Service (SITES), which for the most part is self-supporting, at present circulates some 115 exhibitions a year on arts, history, and science throughout the country, reaching areas that would otherwise have no possibility of actual exhibitions. In FY 1971, 750 areas were served. It is planned to expand the service to circulate 160 exhibitions in FY 1973 to be shown in 1,100 installations. Rising costs of preparation and shipping, however, make it necessary to support the program if it is to reach areas and institutions that cannot afford higher fees. For greater economy and efficiency, shops for the expert mounting and packing of exhibitions have been set up in the NCFA. To maintain and expand the service \$10,000 are needed for the full operation of the shops. An exhibition specialist (\$11,000) is required to aid in the actual mounting of exhibitions.

3. Public Education in Art (2 positions; \$46,000)

The education program of the NCFA, begun during FY 1971, has been of much interest both to schools and museums in the United States and to visitors from abroad. A core of 49 volunteer docents, intensively trained by the NCFA staff, conduct imaginative sessions in the galleries both for children and adults (some 1,000 tours in FY 1971). To reach older children, a print workshop in which students and teachers can work with visiting artists has been established in close association with the department of prints and drawings, made possible by the donation of four excellent etching and lithograph presses. (See the following photograph). A small press is used for demonstrations in the schools. In addition, materials drawn from the collection are being prepared for use by schools in programs of American history, literature, and art. An education department gallery has been active in showing the works of school children and young artists. This ambitious and successful program has been carried on by a very small staff (three positions) and a minimal operating budget drawn in part from outside grants. To make the most of its excellent beginning, especially in the area of educational exhibitions and direct school contacts, the program needs an additional \$17,000 for materials, lecture, and demonstration development. Furthermore, to handle scheduling and other routine operations, releasing the professional staff for more work with the public, a clerk-typist is badly needed (\$8,000). In order to extend the program to the newly opened Renwick Gallery, an additional general education specialist is requested (\$11,000).

The program of scholarship in American art, begun in FY 1971, has proved a value both to the cause of recovery and reevaluation of American art and to the vital operation of other museum programs. It has now been supplemented with a museum intern program to train students in various aspects of museum work, from education to conservation. To provide facilities for these expanded programs for the educational use of the Collection and other Washington Institutions, and to support additional study, \$10,000 are needed for FY 1973.

NATIONAL PORTRAIT GALLERY

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>39</u>	<u>7</u>	<u>46</u>
11 Pers Comp	\$ 541	\$ 61	\$ 602
12 Pers Benefits	44	4	48
21 Travel	11		11
22 Trans of Things	28		28
23 Rent, Comm & Util ...	8		8
24 Printing	8		8
25 Other Services	76	41	117
26 Supplies & Materials ..	58		58
31 Equipment	124	100	224
41 Grants			
TOTAL	<u>\$ 898</u>	<u>\$ 206</u>	<u>\$ 1,104</u>

Analysis of Increase

Pay Increase	16
Program	190

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Acquisition of Portraits (\$100,000). Two-thirds of the Gallery's collection of nearly 550 portraits have come by gift. Already in FY 1972 gifts with an appraised value of over \$200,000 have been received. These include portraits of three signers of the Declaration of Independence. It has been necessary, however, to purchase portraits to enlarge the exhibit and study potential. About \$100,000 is now budgeted for this purpose. Increasingly strong market competition for portraits, especially of major figures of the American Revolution and other periods, makes it necessary to enlarge the purchase fund over the next several years. A increase of \$100,000 is requested for this purpose.

Catalog of American Portraits (2 positions; \$34,000). As the only union catalog of portrait information in the United States, the Catalog of American Portraits is an invaluable reference tool to locate, identify, and study portraits and their artists. Additional field research and processing and cataloging of data are required to make the CAP definitive. Two new positions, a cataloger and a key punch operator (\$14,000), and funds primarily for the regional collection of data by local authorities are requested (\$20,000).

History Department (1 position; \$27,000). Gallery attendance and special tours are increasing as a result of greater public awareness and interest. In turn, this creates additional demands for the development of new exhibitions and publications. An amount of \$21,000 is requested to fund short-term research projects by scholars. An additional clerk-typist (\$6,000) is required for manuscript preparation.

Administration and Technical Services (4 positions; \$29,000). This request would provide an administrative assistant and clerk typist in the office of the director (\$16,000) and photographic laboratory and library technicians in the support units shared with the National Collection of Fine Arts to meet a growing number of public requests for photographic reproductions and library materials (\$13,000).

NATIONAL PORTRAIT GALLERY

1971 Actual.....	\$ 782,000
1972 Appropriation.....	\$ 887,000 <u>1/</u>
1973 Estimate.....	\$1,104,000

The National Portrait Gallery is the only national museum of American history which is devoted to the portraits of the men and women who made that history. The portrait, because it is a visual record of a person and era, bears strong witness to each sitter's role in the American experience and is a crucial part of historical evidence. The National Portrait Gallery attempts to bring to that history a sense of the human elements involved.

The Gallery's current activities can be grouped into four major categories: (1) the expansion and care of the collections; (2) public education through programs with schools and adult groups, and through exhibition of the permanent collection and specially researched and organized loan exhibitions illustrating particular subject areas of American history and portraiture; (3) the research, publication, and national distribution of catalogs of these exhibitions, as well as other studies, both scholarly and popular in nature, related to American history and portraiture; and (4) the compilation of a definitive Catalog of American Portraits to be a comprehensive data bank and national information service on American history and biography comprised of entries on all portraits of historically significant Americans.

A program increase of \$190,000 is sought to augment the acquisitions fund to collect additional data for the Catalog of American Portraits; to increase the History Department's capacity to do research for special exhibitions and publications on American history and portraiture for public education; and to add support staff in the library and the photography lab shared with the National Collection of Fine Arts and in the administrative offices use. An additional \$16,000 are requested for necessary pay for current staff.

Need for Increase

1. Acquisition of Portraits (\$100,000)

When established in 1962 (PL 87-443), the Gallery's collection consisted only of a handful of portraits elsewhere in the Smithsonian and several held at the National Gallery of Art, purchased by Andrew Mellon for eventual transfer to a National Portrait Gallery, when and if one were established. Since that time, the collection has grown to nearly 550 portraits. Although two-thirds of these have come by gift, it has been necessary to acquire the remainder by purchase.

For FY 1972 the Gallery has budgeted \$100,000 for purchases (among the works thus far acquired are portraits of Gen. Robert E. Lee, President Zachary Taylor, and Gen William Clark of the Lewis and Clark Expedition--at a total cost of \$50,000 for the three), and has already received gifts of portraits whose appraised value is in excess of \$200,000 (including portraits of three signers of the Declaration of Independence--Thomas Nelson, Md.; George Clymer, Pa.; and George Read, Dela.).

Over the next few years, the Gallery, as well as many other American institutions and private collectors, will be increasingly interested in portraits of the period of the American Revolution. Because of their rarity, their prices, already high, will be much higher. The National Portrait Gallery is actively seeking to locate such portraits, as well as those of major figures of other periods who should be represented in the national study and exhibit collections.

A major increase in acquisition funds is requested (\$100,000) to provide the Gallery with an annual purchase fund of \$200,000 beginning in FY 1973. This increment will help the NPG build toward a fund of \$500,000 by 1976.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

2. Catalog of American Portraits (2 positions; \$34,000)

The CAP is the only union catalog of portrait information in the United States. As such, it is of incalculable use to the Gallery in locating portraits for the permanent collection, in assisting other institutions and private persons in identifying both the subjects and artists of portraits, and to scholars studying the history of our nation from the point of view of the men and women who made that history. Although already of considerable use to the Gallery, scholars, and the general public, the CAP must be as definitive as possible before it can be a truly valuable resource.

To help achieve this goal, the CAP requires an additional \$34,000 for field research and the processing and cataloging of new data as it is collected. This funding will provide for contracts with local experts to gather portrait data in their regions and for related travel, photography, and clerical assistance. Two new positions, a cataloger and a keypunch operator will code and record the increased flow of information as well as help meet a growing number of public inquiries regarding the Catalog.

3. History Department (1 position; \$27,000)

Gallery attendance for the first six months of FY 1972 (125,000) is up 44 percent over the comparable period in FY 1971. Over the same period, the number of visitors taking educational tours on various aspect of American history has increased from 750 to 4,300. Special exhibitions and publications distributed throughout the country are greatly stimulating interest in the Gallery. The continued quality of these efforts depends to a large extent on the history department which needs to supplement its present staff with scholars working under contract on short term projects related to the exhibition and publication program. An amount of \$21,000 is requested to provide the equivalent of one man year of services and necessary support in FY 1973. For typing manuscripts and performing various other clerical duties, a clerk-typist is required (\$6,000) to supplement the work of the one secretary presently serving the history department.

4. Administration and Technical Services (4 positions; \$29,000)

The support staff for the office of the director presently consists of two secretaries. This staff level is now insufficient to support the administrative operation of the Gallery's expanding programs. Two positions are requested, for an administrative assistant and a clerk typist (\$16,000).

Demands on the photographic laboratory (shared with the National Collection of Fine Arts) have increased along with the expansion of the collection and of the exhibition schedule. The photography of works of art requires particular skills to deal with the three-dimensional qualities of sculpture and the color of paintings. Increasingly, the NPG and NCFA are receiving requests from publishers, authors, and film producers, as well as from the general public for quality reproductions of items in the collections. Many of these items are painstakingly photographed by specially trained photographers, but the film must be sent out for processing and printing because the museums lack the staff to handle the work. Much of this outside work is of poor quality. To support the two photographers presently on the staff, a position for a photo lab technician is requested. He will assist with processing and printing and at the same time be trained in the complicated methods of art photography, which will be of great future value to both galleries (\$6,000).

The library, also shared with the NCFA and the Archives of American Art, has been building its collections to serve the needs of the Smithsonian and the members of the public who utilize its materials for research purposes. Both groups are making increasing demands on the Library staff. A library technician is requested to relieve the middle level professional library staff in the routine work of processing, cataloging, and ordering needed accessions so they can devote more time assisting users of the library (\$7,000).

JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

No. of Perm Pos	Base 1973*	Increase Requested	1973 Estimated
	<u>21</u>	<u>14</u>	<u>35</u>
11 Pers Comp	\$260	\$126	\$386
12 Pers Benefits	22	12	34
21 Travel	9	6	15
22 Trans of Things	3	7	10
23 Rent, Comm & Util ...	45	-7	38
24 Printing	4	61	65
25 Other Services	256	-213	43
26 Supplies & Materials ..	22	-1	21
31 Equipment	14	1,422	1,436
41 Grants			
TOTAL	<u>\$635</u>	<u>\$1,413</u>	<u>\$2,048</u>

Analysis of Increase

Pay Increase	13
Program	1,400

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Preparations for Opening and Operating the Museum (14 positions). A continued phased buildup of staff is required to conduct research, exhibition, education, and technical support programs in the new Museum scheduled to open in 1973. The requested 14 additional personnel are primarily technical and support staff and include museum specialists, technicians, and aides; clerical personnel; and staff for conservation, photography, and framing shops. Also included are professional level personnel to supervise exhibit and education programs. Many of these persons will be hired to coincide with the completion of the building in December 1972. No new funds are requested for these positions in FY 1973 because the initial conservation and restoration work and costs will decline in that year, thus freeing funds in the base appropriation.

Furnishing of the Building Interior (\$1,400,000). Approximately \$1,426,000 of furnishings and equipment not included in the original construction contract must be obtained and installed to permit effective functioning of the Museum. An increase of \$1,400,000 is requested to meet such non-recurring costs as storage display screens (\$400,000); furnishings and equipment for exhibit galleries, other public areas, and administrative and laboratory spaces (\$894,000); security systems (\$50,000); exterior lighting and landscaping (\$50,000); and other items (\$32,000). These are one-time, nonrecurring expenditures.

JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

1971 Actual	\$	385,000	
1972 Appropriation	\$	630,000	1/
1973 Estimate	\$2,	048,000	

The Joseph H. Hirshhorn Museum and Sculpture Garden, now under construction on the Mall, will house a magnificent gift to the nation of more than 7,000 paintings and sculptures. The world-renowned sculptures in the collection range historically from antiquity to the present. The depth of representation of major sculptors of the nineteenth and twentieth centuries is unique. The paintings in the collection are primarily twentieth century. Beginning with such precursors as Thomas Eakins and Winslow Homer, the course of American painting is extensively covered. Complementing the American section is a strong group of significant European paintings of the past three decades. For museum officials, scholars, students, and publishers, the Hirshhorn collection continues to be a major source of documentation in the field of modern art.

The Act of November 7, 1966, authorized construction of the Museum and designated the Mall site. Building construction began in March 1970, and the estimated completion is December 1972. All phases of the work are presently geared to prepare for the opening of the Museum by the fall of 1973. See Table I for the schedule of major activities.

The requested program increase of \$1,400,000 is required for the furnishing and equipping of the building. These are one-time, nonrecurring expenditures. An additional \$13,000 are sought for necessary pay for current positions. Table II summarizes current and projected operating and nonrecurring costs through FY 1974.

Need for Increase1. Preparing for the Opening and Operating of the Museum (14 positions)

In order that the Hirshhorn Museum may conduct a full and balanced program of public exhibitions, educational activities, research, and technical support, a continued phased buildup of staff is required. In the expectation that the building will be ready for occupancy in the middle of FY 1973, 14 new positions are requested. As a result of the predicted drastic reduction of expenditures to prepare works of art for the opening exhibition, the entire FY 1973 costs of these positions can be met from the existing operating base appropriation. No new funds are requested for these positions in FY 1973.

The requested 14 additional personnel in the 1973 budget are primarily technical and support staff and include museum specialists, technicians, and aides; clerical personnel; and personnel to staff conservation, photography, and framing shops. Also included are professional level personnel to supervise the exhibits and educational programs. Many of these persons will be hired to coincide with the completion of the building.

Funds are in the budget request for other contractual service costs related to the collections, the rental of working space and services, and photography to document the collections for exhibits and research purposes. Funds have also been included in this request for transportation and movement of household goods of Smithsonian Institution personnel transferring with the collection to Washington, D.C. as well as for essential travel of senior administrative and curatorial personnel.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

2. Furnishing of the Building Interior (\$1,400,000)

Approximately \$1,426,000 of furnishings and equipment not included in the original construction contract must be obtained and installed to permit functioning of the Museum. Construction costs of \$16,000,000 (\$15,000,000 appropriated by Congress, and a \$1,000,000 gift by Mr. Hirshhorn) will provide the Institution with a basic museum building, including necessary utility equipment. This amount does not permit the Museum to be completed to the point necessary for public exhibition and educational programs. It does not provide storage facilities for the collection nor furnishings and equipment for exhibit galleries, public areas, or administrative and laboratory spaces. To insure a prompt opening to the public after completion of construction, it is essential that procurement and installation of furniture, furnishings, moveable equipment, and other items be provided in FY 1973. An increase of \$1,400,000 is requested for this purpose.

The interior furnishings such as drapes, carpeting, lighting, etc., are mandatory for the opening and continued functioning of the Museum. Furniture for museum personnel is a necessity for efficient operation of the curatorial, technical, and administrative staffs. Garden benches and gallery furniture must be in place to accommodate the anticipated crowds attending the opening show and the continuing exhibitions. Such items as work sinks and tables for the various shops must be installed if the Museum is to perform the necessary preparation, maintenance, and protection of the collections. An itemization of the \$1,426,000 by functions is shown on Table II.

It is estimated that the FY 1974 request for operating funds for the Hirshhorn Museum and Sculpture Garden will be at least \$1,000,000 below the present request.

TABLE I
JOSEPH H. HIRSHHORN MUSEUM & SCULPTURE GARDEN

Schedule of Major Activities - FY 1972 - 1974

FY 1972				FY 1973				FY 1974		
Jul				Jul		Oct	Dec	Jul	Sep	Oct
Buildings Construction										
Mock-up Installation and Hanging of Exhibition - Opening Show										
Equipment - Furnishings for Interior										
Catalog of Opening Exhibition										
Transfer of Collection										
Inventory of Collection										

Scheduled
Occupancy

TABLE II
JOSEPH H. HIRSHHORN MUSEUM & SCULPTURE GARDEN

<u>Operating Costs</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Positions	18	21	35	60
Staff Costs (including benefits)	\$185,000	\$277,000	\$420,000	\$692,000
Conservation & Restoration	140,000	200,000	40,000	0
Supplies, Materials and Equipment	15,000	36,000	31,000	47,000
Other (Exhibits, Planning, travel, education program)	<u>45,000</u>	<u>117,000</u>	<u>131,000</u>	<u>166,000</u>
Subtotal, regular operation	\$385,000	\$630,000	\$622,000	\$905,000

Nonrecurring costs

Storage display screens	\$400,000
Coatroom furnishings & area lights	8,000
Gallery furnishings	210,000
Lamps and partitions	32,000
Fourth floor furnishings	205,000
Photography Lab	27,000
Library shelving	50,000
Registrars office and staff lunchroom	19,000
Stone pedestals	95,000
Security systems	50,000
Exterior lighting and landscaping	50,000
Examination Lab	38,000
Conservation Lab	65,000
Auditorium furnishings	67,000
Tour guides	60,000
Sales room	<u>50,000</u>

Subtotal, nonrecurring costs \$1,426,000

TOTAL \$385,000 \$630,000^{1/} \$2,048,000 \$905,000

^{1/} FY 1972 appropriation adjusted by funds lapsing in 1972.

FREER GALLERY OF ART

No. of Perm Pos	Base 1973*	Increase Requested	1973 Estimated
	<u>8</u>	<u>6</u>	<u>14</u>
11 Pers Comp	\$61	\$64	\$125
12 Pers Benefits	6	6	12
21 Travel			
22 Trans of Things			
23 Rent, Comm & Util ...		2	2
24 Printing			
25 Other Services	3	1	4
26 Supplies & Materials ..	3	5	8
31 Equipment	9	20	29
41 Grants			
TOTAL	<u>\$82</u>	<u>\$98</u>	<u>\$180</u>

Analysis of Increase

Pay Increase	3
Program	95

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

The Freer's private funds are no longer able to sustain the Gallery's programs even at their present level. The growth in private expenses has not been the result of new staff or programs but from inflation in salaries, acquisitions costs, and other normal operations.

Public and scholarly use of the Freer is increasing. It is now urgent to begin a phased program of additional federal fund support and thus more adequately meet the terms of the 1906 Deed of Gift.

Conservation and Research (3 positions; \$37,000). A chemist and computer time (\$15,000) are required in the Technical Laboratory for research in connection with the analysis and identification of objects in the collection. This work is done to gain a better understanding of the physical and chemical nature of these objects for their preservation and for clues as to how they were made in ancient times. Two restorers (\$22,000) in the Oriental Picture Mounting Studio are needed to repair and restore 10th to 20th century paintings and drawings for exhibition and study.

Reference Collections (3 positions; \$33,000). One librarian and two photographers and funds for equipment (\$33,000) will be used for cataloging and documenting the Gallery's resources and to provide materials for the use of researchers and the general public.

Exhibits, Maintenance, and Operations (\$25,000). The requested amount will provide supplies and material for the construction of exhibit cases (\$5,000), a saw and jointer to replace wornout equipment (\$3,000), the installation of ultraviolet filters to protect paintings from light (\$15,000), and carpeting in the library (\$2,000).

FREER GALLERY OF ART

1971 Actual.....	\$ 57,000
1972 Appropriation.....	\$ 80,000 ^{1/}
1973 Estimate.....	\$180,000

The Freer Gallery of Art houses one of the world's most distinguished collections of Oriental Art. Including over 10,000 works of art from China, Japan, Korea, India, and the Near East, the collection covers paintings, sculptures, and other objects in stone, wood, lacquer, jade, pottery, porcelain, bronze, gold, and silver. Items not currently on exhibition and the library of 40,000 volumes are available and used extensively by the Gallery's staff and numerous visiting scholars and students. The two-fold program envisaged by the founder involves the continuing search for works of the highest quality that may be added to the collections and the continuing study of these works of art as keys to understanding the civilizations that produced them.

An appropriations increase of \$95,000 is requested to provide basic support to programs of conservation and research, reference collections management, building operations, and exhibition. Additional funds in the amount of \$3,000 are requested for necessary pay for current positions.

Need for Increase

In 1973 the Freer will celebrate its 50th anniversary as the major research institution in Far Eastern art studies in the Western World. The Freer Deed of Gift states that the "building, when constructed, and the objects, when delivered, shall be cared for and maintained perpetually by the second part, or its successors, at its own expense." Over the years the Smithsonian has provided but a small portion of this expense. The Buildings Management Department has provided some basic services; however, the overall cost of gallery operations was borne largely by the Freer Endowment.

In the past, this sharing of support was tolerable since Freer private funding (now averaging about \$700,000 a year from dividend and other income) was sufficient to permit the Gallery to maintain its services to the public and to the scholarly world. This situation has drastically changed over the past few years and the Freer's private funds are no longer able to sustain the Gallery's programs even at their current level. The following information summarizes the problem:

--In FY 1965, private income was \$634,000 and expenses were \$590,000 thus enabling the Gallery to add about \$44,000 to its reserve which then totaled approximately \$550,000. In FY 1971, private income was \$743,000 but expenses had increased to \$967,000 and the reserve had declined to \$211,000. It is anticipated that the reserve will be eliminated by the close of FY 1972.

--The growth in private expenses has not been the result of staff growth or the initiation of new programs. The Gallery, due to a lack of funds, cannot keep pace with the demands for public and scholarly services placed on it. Employment has increased only from 28 to 30 since 1965, yet salaries and benefits costs soared from \$260,000 to \$403,000 largely as a result of pay comparability with federal salary scales. Art acquisitions have increased from \$205,000 to \$272,000, yet fewer works can now be purchased since prices for objects have increased several-fold over this six year period. Inflation has greatly affected other areas of the Gallery's operations including conservation supplies and equipment, exhibition materials, and publications acquisition and printing.

Careful reviews show no areas for significant private budget cost reductions without serious curtailment of current programs. It is urgent to begin a phased program of additional federal fund support and thus meet the Institution's obligation that it assumed in 1906. Such action, if taken, will

^{1/} FY 1972 appropriation adjusted by funds lapsing in 1972.

permit the Freer to maintain its status as a highly specialized public gallery and research arm of the Smithsonian Institution.

Over the next three fiscal years, the Smithsonian requires an additional \$300,000 for recurring care and maintenance of the building and of objects in the collection. Of this amount, \$95,000 are requested in the FY 1973 budget for the following operating purposes. The six positions requested are all conversions of current private roll employees.

1. Conservation and Research (3 positions; \$37,000)

The technical laboratory is responsible for research in connection with the analysis, preservation, and identification of objects in the collection and other related material. Necessary techniques include wet and instrumental chemical analysis, microscopy, electron microscopy, X-ray, and X-ray diffraction. The work done by the laboratory is for the basic purpose of gaining a better understanding of physical and chemical nature of the objects with a view of preserving them and contributing to the knowledge of how they were made in ancient times. To support this essential work, a chemist is required (\$14,000). Ongoing research projects in the technical laboratory now require the use of computers (\$1,000).

The oriental picture mounting studio's function is to repair and restore Far Eastern paintings and drawings in the collection (dating from the 10th to the 20th century) and prepare them for exhibition. Near Eastern paintings are rebacked and strengthened. Research projects are conducted in the area of Far Eastern conservation. Personnel serve as consultants and advisors to institutions, museums and individuals on the proper and necessary steps required for the preservation of oriental paintings. Students are taught the basic principles of Far Eastern conservation and the connoisseurship of papers, silks, adhesives, and pigments. The staff of the studio are highly trained artisans from the Far East. Funds for two restorers are requested (\$22,000).

2. Reference Collections (3 positions; \$33,000)

The Freer Gallery of Art library specializes in materials related to the art and culture of the Far and Near East. Books, periodicals, photographs, slides, maps, and archival material on all phases of the Freer Collection come within its jurisdiction. It is open to the public and is widely used by scholars doing research on all aspects of oriental art. In addition the Library personnel take part in the cataloging and documentation of objects in the collection and provide information about the collection on an international basis. One librarian position is requested (\$8,000) and funds for machine rental (\$2,000).

The basic function of the photographic laboratory is to record the objects in the collection, working always toward a complete photographic documentation of the Gallery's holdings. In addition, it provides photographic materials for the use of research scholars and for the conservation laboratory. Photographs, color transparencies, and slides are produced on order for the use of scholars, educational institutions, and the general public. Two photographers are requested (\$23,000).

3. Exhibits, Maintenance, and Operations (\$25,000)

Building operations include mounting, mending, and restoring art objects, especially stone and wood sculpture; construction of storage facilities; designing and constructing exhibition cases, pedestals, bases, and other mounts and supports; construction of wood cores and panels which are essential to the restoration and preservation of Chinese and Japanese paintings and screens, and of the frames necessary to exhibit them. To maintain exhibition programs gears, glass and special fixtures for exhibition cases are requested (\$5,000). A saw and jointer are requested to replace outworn equipment (\$3,000). Installation of ultraviolet filter plastic sheeting above lay lights is needed immediately to protect priceless paintings from fading and deteriorating (\$15,000). To continue the rehabilitation program and reduce noise levels, carpeting is needed for the Library (\$2,000).

ARCHIVES OF AMERICAN ART

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>11</u>	<u>1</u>	<u>12</u>
11 Pers Comp	\$132	\$12	\$144
12 Pers Benefits	10	1	11
21 Travel	5	2	7
22 Trans of Things	2	1	3
23 Rent, Comm & Util ...	5	1	6
24 Printing	15	10	25
25 Other Services	4	1	5
26 Supplies & Materials ..	3	1	4
31 Equipment	2	1	3
41 Grants			
TOTAL	<u>\$178</u>	<u>\$30</u>	<u>\$208</u>

Analysis of Increase

Pay Increase	5
Program	25

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Establishment of San Francisco Office (1 position; \$25,000). Regional offices are the chief means of locating, attracting, and acquiring valuable collections of artists' and dealers' personal papers. A position for an office director (\$8,000 on a half year's basis) is requested to establish such an office in rent-free quarters in the DeYoung Museum in San Francisco. This branch would make available to West Coast researchers the full resources of the Archives several million items documenting American Art. The balance of the increase, \$17,000, is for micro-filming and other costs in all offices. Permission has been received recently to microfilm three major collections in the New England area.

ARCHIVES OF AMERICAN ART

1971 Actual	\$ 166,000
1972 Appropriation. \$ 175,000	<u>1/</u>
1973 Estimate	\$ 208,000

The Archives of American Art is committed to aiding research and scholarship in the history of the visual arts in this country from prior to the Revolutionary War period to the present time. It acquires, organizes, and preserves the primary documentation needed by historians -- the correspondence, diaries, business papers, and photographs of painters, sculptors, critics, dealers, and collectors, and the formal records of galleries, museums, and art societies. These collections of paper are cataloged, microfilmed, and made available to scholars.

The processing and chief reference center of the Archives is now located in space provided by the National Collection of Fine Arts and the National Portrait Gallery library. Added to the library, and to the archival material already possessed by these two museums, the Archives makes this building the major center for the study of American Art. In

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

order to make its holdings accessible to scholars throughout the country and to develop a systematic collecting program, regional centers are currently maintained in Boston, New York, and Detroit.

The organization anticipates income from private funds of about \$115,000 in FY 1972. This income is used to support Archives' activities, such as quarterly publication and distribution of the Archives' *Journal*, and specialized acquisitions. It supplements on a matching basis activities supported by federal appropriations such as cataloging, information retrieval, and reference services.

An increase of \$25,000 would be used to establish a regional office in San Francisco, California, and to fund microfilming and other costs in all offices. Funding of \$5,000 is requested for necessary pay.

Need for Increase

Establishment of San Francisco Office (1 position; \$25,000)

FY 1971 was the Archives of American Art's first year as a bureau of the Smithsonian Institution. It was a period of establishing residence, organizing a Washington office staff, and working out new procedures in the handling of both administrative and archival details. By July 1971 it had become an integral part of the Smithsonian's research facilities and its resources are being intensively used by staff and fellows of the National Collection of Fine Arts, the National Portrait Gallery, the National Gallery of Art, faculty and graduate students across the country, and by scholars from such places as Chicago, London, Munich, New Orleans, New York, Paris, Seattle, San Francisco, Stockholm, and Tokyo. Significant additional collections of papers have been received.

Regional offices are the chief means of locating, attracting, and acquiring collections of artists' and dealers' personal papers. The additional position requested is for a west coast area director to man the Archives branch office to be set up in rent-free quarters in the DeYoung Museum in San Francisco. Private funds will subsidize additional staff in this office. This branch of the Archives will make available to west coast researchers in American art and American history the full resources of the Archives' collections, three million items on microfilm (continually being added to), five million original items, taped interviews, and photographs. It will provide a wealth of primary sources information to the many universities and research centers on the west coast. Funding of \$8,000 are required for the half-year costs of this position. The balance of the requested increase, \$17,000 are for microfilming and other costs in all offices. For instance, permission has been received recently to microfilm three major collections in the New England area.

NATIONAL ARMED FORCES MUSEUM ADVISORY BOARD

No. of Perm. Pos.	Base 1973* <u>6</u>	Increase Requested <u>1</u>	1973 Estimated <u>7</u>
11 Pers. Comp.	\$108	\$13	\$121
12 Pers. Benefits	9	1	10
21 Travel	2		2
22 Trans. of Things	1		1
23 Rent, Comm. & Util.....			
24 Printing	3		3
25 Other Services		8	8
26 Supplies & Materials	1	1	2
31 Equipment			
41 Grants			
 TOTAL	 \$124	 \$23	 \$147

Analysis of Increase

Pay Increase	3
Program	20

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Bicentennial Outdoor Museum (\$9,000). During FY 1971 legislative action to establish the Bicentennial Outdoor Museum and to authorize negotiations with the Department of the Interior for acquisition of park sites was initiated. A brochure describing concept and programs was prepared. During FY 1972 staff will proceed with preliminary site development planning in anticipation of construction to commence in FY 1974 and with special research required for pursuing Bicentennial components of the outdoor museum (the nature of the Continental Army and other aspects of the Revolution). Construction planning funds are requested elsewhere in this budget. In FY 1973, \$9,000 are being requested to supplement planning for the park's construction and program operations, and to continue research to insure authenticity of the outdoor museum's Bicentennial activities.

Dwight D. Eisenhower Institute (1 position; \$11,000). During FY 1971, the effort was on classifying and cataloging a large collection of published materials for the nucleus of the Eisenhower Institute Library. Detailed planning will take place in FY 1972 to include consultation with other bureaus and agencies and continued development of collections of published materials for the Institute Library with emphasis on the American Revolution. In FY 1973 one position (secretary; \$11,000) is sought to provide essential staffing for the growing workload. By realigning existing functions, the task of administering the Institute will be performed on an interim basis by existing personnel.

NATIONAL ARMED FORCES MUSEUM ADVISORY BOARD

1971 Actual	\$154,000
1972 Appropriation.....	\$121,000 <u>1/</u>
1973 Estimate.....	\$147,000

The National Armed Forces Museum Advisory Board, established by Public Law 87-186 (approved August 30, 1961), advises and assists the Board of Regents of the Smithsonian Institution on matters relating to establishment of a National Historical Museum Park, to be known as the Bicentennial Park and a study center to be designated the Dwight D. Eisenhower Institute for Historical Research.

For FY 1973, a program increase of \$20,000 is requested for Bicentennial Outdoor Museum program planning and for Eisenhower Institute activation. An additional \$3,000 are required for necessary pay for current staff.

Need for Increase

1. Bicentennial Outdoor Museum Program Planning and Related Preservation of Collections (\$9,000)

Pending legislation in the form of S. 2153 and H.R. 10311 seeks authority to establish at two sites on the Potomac River, Fort Foote in Prince George's County, Maryland, and Jones Point Park, on the southern edge of Alexandria, Virginia, both now in federal ownership under the jurisdiction of the Department of Interior. Endorsed by the American Revolution Bicentennial Commission in its Report to the President of July 4, 1970, this Bicentennial Outdoor Museum is designed as a living outdoor museum re-creating in authentic detail the daily camp life of the patriot soldier of the American Revolution. Construction planning funds are requested elsewhere in this budget. The following photograph portrays one highlight of the Museum's planned activity. An amount of \$9,000 is requested for program planning and supervisory expenses related to construction planning and for the preservation of collected objects many of which will be used at the Bicentennial Outdoor Museum.

2. Dwight D. Eisenhower Institute Development (1 position; \$11,000)

The Advisory Board also has conducted preliminary planning for the Dwight D. Eisenhower Institute for Historical Research, authorized by the Act of August 30, 1961, and soon to be activated. The Institute, through its programs of research and publication, will promote understanding of the historic role of the armed forces in context with the whole history of American civilization. During the Bicentennial period, the programs of both the Institute and of the Museum will be oriented especially to providing deeper insight into and understanding of the background of our Continental forebears and their struggle to establish the world's first modern republic. A secretary is requested to provide essential staffing (\$11,000).

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

PUBLIC SERVICE

The Institution has not allowed itself to rest with static presentations and exhibits of collections directed at only those persons with sufficient motivation, time, or money to visit its centrally located galleries and museums. In order to be successful in conveying the richness of the nation's heritage to a wider public, and to offer additional opportunities for appreciation of its growth and development, the Institution has sought to expand its public reach. It has achieved this in a variety of ways over the last several years.

The development of an experimental neighborhood museum in Anacostia has shown that museum operations may be carried out in a crucible of the inner city, that children may learn with delight and advantage, and that the residents of the area will treat with respect what they regard as their own center for learning and recreation. The story of the Anacostia Neighborhood Museum and its usefulness stands as one of the outstanding achievements of the Institution in recent years.

The activities of the other public service units have been no less important. There is the Folklife Festival on the Mall, sponsored annually by the Division of Performing Arts, and increasing significantly in popularity with all age groups of the nation. The success of this program is tied to the way it brings together and presents our diverse ethnic customs and reinforces the concept, to the public, that we are indeed one nation.

The world-wide character of the programs of the Office of International Activities serve to bring this nation closer to the ideal of a world community through research and dissemination of knowledge. This Office helps to deepen the intellectual and cultural ties among nations by cultivating man's curiosity about commonalities in development as evidenced in anthropology, archeology, and biology.

In this age of so-called "information explosion" the amount of material published here and abroad has a direct impact on the International Exchange Service's ability to perform its important task of improving the world's libraries. Part of its work can be viewed as helping developing nations that are striving to build their educational systems and knowledge resources. The value of the Exchange is self-evident, if we are to serve the national interest and assist countries in these vital areas.

The Office of Public Affairs serves the common causes of the Institution in a variety of ways. But its chief contribution is to serve the public by informing them of the opportunities available to further their interests, knowledge, and participation in research, exhibition, and other education activities of the Smithsonian.

ANACOSTIA NEIGHBORHOOD MUSEUM

No. of Perm Pos	Base <u>1973*</u>	Increase <u>Requested</u>	1973 <u>Estimated</u>
	<u>15</u>	<u>3</u>	<u>18</u>
11 Pers Comp	\$104	\$32	\$136
12 Pers Benefits	10	3	13
21 Travel	3	2	5
22 Trans of Things			
23 Rent, Comm & Util ...	29		29
24 Printing	2		2
25 Other Services	4	8	12
26 Supplies & Materials ..	26	26	52
31 Equipment	3	9	12
41 Grants			
TOTAL	<u>\$181</u>	<u>\$80</u>	<u>\$261</u>

Analysis of Increase

Pay Increase	5
Program	75

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Urban Studies Program (3 positions; \$50,000). The success of the Anacostia Museum has led museums in many sections of the country to consider developing similar neighborhood museums. Anacostia's success stems from its involvement in urban problems. It is concentrating on a community awareness approach to demonstrating, by exhibits and related education programs, methods of community self-help and improvement. The Carnegie Corporation, through a two-year grant, is funding a community history of Anacostia. This history will integrate the impact of political and social events on the citizens of the neighborhood and provide a better understanding of the causes of contemporary urban problems. Carnegie funds will expire in fiscal year 1972. Funds are requested to transfer three private positions (a program analyst, a research assistant, and a clerk-typist) to Federal employment (\$30,000) and provide necessary supplies, equipment, and travel (\$20,000) in order to continue this and related projects.

Exhibits Training Center (\$25,000). The Museum is negotiating with a large foundation for the establishment of a training center in Anacostia. The center would provide productive training in a needed area of museum operations to disadvantaged persons and would help fill the demands for exhibits that would extend the concept of the Anacostia Museum to other communities. A request for \$200,000 of matching funds is requested in the Bicentennial program section of this budget. An amount of \$25,000 is requested here to help obtain consulting services for developing the program curriculum and to provide other start-up support.

ANACOSTIA NEIGHBORHOOD MUSEUM

1971 Actual	\$151,000
1972 Appropriation.....	\$178,000 <u>1/</u>
1973 Estimate.....	\$261,000

The Anacostia Neighborhood Museum was established to reach out to new audiences who are unaware of museum resources, physically too far from them, or, as inhabitants of low-income population density centers, do not see the interest or relevance of museums. Starting in 1966, the Smithsonian sought out community reaction to the concept of a permanent neighborhood museum in the inner city. Reaction was most favorable and the desire for community involvement appeared strongest in Anacostia. The Museum was founded entirely by private donations and was opened in September 1967. Exhibits concentrate on visitor involvement. Classes in sculpture, leathercraft, clay modeling, drawing, and painting have been held. A photograph of such a class appears on a following page. In subsequent months, the Museum, in close collaboration with its Neighborhood Advisory Council, began to present exhibits which the community requested, primarily in the field of Negro history. In each case, the exhibit served as a backdrop for school programs, lectures, and concerts. Four years later, the Museum has entertained and instructed about 200,000 visitors and offers a widening array of classes and youth programs. Anacostia has linked its activities directly to the needs of the community and has assured a fresh, nontraditional approach to the role of the museum.

In FY 1973 the Museum is seeking an additional \$75,000 to strengthen activities devoted to demonstrating the solutions to various urban problems, and by creating an exhibits training center which would productively serve the growing number of neighborhood museums around the country. In addition, \$5,000 are sought for necessary pay for staff.

Need for Increase1. Urban Studies (3 positions; \$50,000)

Because the Museum has been successful, museums in many sections of the country are considering how they might also develop neighborhood museums. With regard to this effort, the American Association of Museums received a grant of \$50,000 from the Department of Housing and Urban Development to do a study of neighborhood museums and other urban projects. Since the Anacostia Museum has been the successful forerunner in this area, the director of the Anacostia Museum was selected as co-chairman of a nationwide committee to undertake this project. The basic reason for the Museum's success has been its recent involvement in urban problems. Its first exhibition on rat infestation which covered the history and solution to this very pertinent problem, coupled with related films, community discussions, and dramatic presentations, catapulted this Museum into the area of urban problems. Through its exhibits and related education programs, the Anacostia Museum is concentrating on an awareness approach to demonstrating in Washington and other cities methods of community self-help and improvement. Part of the effort is directed at bringing about a better historical understanding of the importance of the Anacostia community to the past development of the city. The Carnegie Corporation, through a two year grant, is funding the initial work in this area to research a set of problems and produce a community history of Anacostia. With regard to this, many interviews of Anacostia residents have been taken by Museum staff working

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

with graduate students in urban studies from Howard University and the University of Maryland. The interviews capture the viewpoints of the older residents and their perspectives on the historical community changes that have taken place over more than three-quarters of a century. This information will be utilized, along with other documentation from old newspaper files, articles, and books, to produce a community history which will integrate the impact of political and social events on the citizens of the neighborhood, and provide a better understanding of the causes and sources of contemporary urban problems. Carnegie funds will expire in FY 1972, but it is imperative that the Museum continue this and related projects. Funds are requested to transfer three private positions (a program analyst, a research assistant, and a clerk typist) to federal employment (\$30,000) along with \$20,000 for necessary supplies, equipment, and travel. The group is actively working with members of the Museum staff for the creation of better exhibitions, discussions, and demonstrations regarding community crime, drugs, housing, employment, and education problems.

2. Exhibits Training Center (\$25,000)

Currently the Museum and Institutional administration are negotiating with a large foundation for the establishment of a training center in Anacostia to serve the practical exhibit and educational needs of museums across the country. The Foundation has indicated it would be willing to support such a venture if the Federal Government will supply matching funds. A request for \$200,000 which will equip and develop the training center is presented in the Bicentennial of the American Revolution section of this budget because of this facility's potential for the preparation of Bicentennial exhibits. To help obtain consulting services for developing a program curriculum and to provide start-up support for supplies and materials, \$25,000 are being requested. The Center's objective is not only to provide productive training in a needed area of museum operations, but to help fill the demands for exhibits that would extend the concept of the Anacostia Neighborhood Museum to various other communities across the nation.

OFFICE OF INTERNATIONAL ACTIVITIES

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>9</u>	<u>1</u>	<u>10</u>
11 Pers Comp	\$ 125	\$ 20	\$ 145
12 Pers Benefits	10	2	12
21 Travel	5	2	7
22 Trans of Things			
23 Rent, Comm & Util ..	1		1
24 Printing			
25 Other Services	2	1	3
26 Supplies & Materials ..	1	1	2
31 Equipment			
41 Grants			
TOTAL	<u>\$ 144</u>	<u>\$ 26</u>	<u>\$ 170</u>

Analysis of Increase

Pay Increase	6
Program	20

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Administration of the Special Foreign Currency Program (1 position; \$20,000). A position for an overseas coordinator (\$16,000) is requested to help insure successful and productive cooperative work between United States and Indian research institutions in a program in environmental assessment initiated at a bi-national symposium in New Delhi, India, in February 1971. The balance of the requested increase, \$4,000, is for travel and related administrative costs of the Foreign Currency Program, including the expenses of the Advisory Councils who review and select projects for funding.

OFFICE OF INTERNATIONAL ACTIVITIES

1971 Actual	\$138,000
1972 Appropriation ...	\$141,000 <u>1/</u>
1973 Estimate	\$170,000

The Office of International Activities was established in 1965 to coordinate the Smithsonian's many scientific and cultural activities abroad. In this capacity, the Office assists members of the Smithsonian staff working or contemplating work abroad. It is the Institution's point of liaison with the Department of State, American embassies and research institutes abroad, and foreign diplomatic missions in Washington.

Of special importance, are the liaison activities of the Office in support of the Smithsonian's world-wide environmental and conservation interests. The Office has recently also begun coordination of the Institution's exhibits contribution, especially on art, to the United States Information Agency for circulation abroad and of foreign exhibits displayed in the Institution and on occasion circulated in the United States by the Smithsonian Traveling Exhibition Services. The Office also coordinates the Smithsonian's international preparations for the world-wide celebration in 1973 of the 500th Anniversary of the birth of the Polish astronomer, Copernicus.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

Moreover, the Office schedules international visitors to the Smithsonian, many of them for the State Department's Cultural Exchange Program, and plans and administers training programs for foreign museum techniques involving visits to the Smithsonian and other museums around the country.

Finally, the Office administers the major Special Foreign Currency Program which has received appropriations since FY 1966 totalling \$16.6 million equivalent in foreign currencies to award grants to United States institutions of higher learning, including the Smithsonian, in fields of Smithsonian interest. Grants support American basic research and museum education programs in those countries where the United States holds local currencies in "excess" of its needs.

The program increase of \$20,000 requested for FY 1973 is in support of the Foreign Currency Program. Additionally, \$6,000 are requested for necessary pay.

Need for Increase

Administration of the Special Foreign Currency Program (1 position; \$20,000)

Management of the Foreign Currency Program in South Asia has taken on special importance since development of an Indian-American program in environmental assessment was begun under Smithsonian auspices in February 1971 at a bi-national symposium in New Delhi. This U.S. National program will require a coordinator (\$16,000) to ensure successful cooperative arrangements between the Smithsonian and the Indian authorities and between United States and Indian research institutions which will cooperate in carrying it out. The coordinator would spend at least a part of each year in India for this purpose and would foster other Smithsonian Foreign Currency Program activities there and in Pakistan, Ceylon, and Burma as well. Characteristically, Smithsonian sponsored scientific and cultural programs seem likely to evolve with a minimum of delay despite national political differences in the area.

The remaining \$4,000 increase is essential for travel and related expenses to enable the Foreign Currency Program to convene Advisory Councils to review the expanding activity in the major fields of Program interest and for OIA staff travel in the United States and abroad where foreign currencies are not available for this purpose.

INTERNATIONAL EXCHANGE SERVICE

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>9</u>	<u>0</u>	<u>9</u>
11 Pers Comp	\$83	\$8	\$91
12 Pers Benefits	7		7
21 Travel			
22 Trans of Things	45	10	55
23 Rent, Comm & Util ...			
24 Printing			
25 Other Services			
26 Supplies & Materials ..	4		4
31 Equipment			
41 Grants			
 TOTAL	 <u>\$139</u>	 <u>\$18</u>	 <u>\$157</u>

Analysis of Increase

Pay Increase	8
Program	10

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Exchange of publications (\$10,000). The rates paid to shippers and the United States Postal Service have increased. Therefore additional funds are needed to finance these higher costs.

INTERNATIONAL EXCHANGE SERVICE

1971 Actual	\$ 126,000
1972 Appropriation	\$ 137,000 <u>1/</u>
1973 Estimate	\$ 157,000

Through the International Exchange Service, public and private institutions in the United States exchange their publications with organizations in other countries and receive in exchange publications from the foreign organizations. Begun in 1849 as an exchange service between the Smithsonian Institution and the learned societies in other countries, the program was so successful that five years later it was expanded to other American organizations.

When the Brussels Convention of 1886 was adopted by the United States, the Smithsonian Institution became the official exchange bureau in the United States for the international exchange of literary, scientific, and cultural publications.

14 Stat 573, as amended, provides that the exchange of the official United States Government publications shall be made through the Smithsonian Institution.

A program increase of \$10,000 is requested. Funding of \$8,000 for necessary pay is also sought.

Need for IncreaseExchange of publications (\$10,000)

The rates paid to shippers and the United States Postal Service have increased. Therefore additional funds are needed to finance these higher costs.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

DIVISION OF PERFORMING ARTS

No. of Perm Pos	Base 1973*	Increase Requested	1973 Estimated
	<u>7</u>	<u>3</u>	<u>10</u>
11 Pers Comp	\$123	\$26	\$149
12 Pers Benefits	11	2	13
21 Travel	8	4	12
22 Trans of Things	4		4
23 Rent, Comm & Util ...	6	1	7
24 Printing	2		2
25 Other Services	38	40	78
26 Supplies & Materials ..	11	5	16
31 Equipment	3	10	13
41 Grants			
TOTAL	<u>\$206</u>	<u>\$88</u>	<u>\$294</u>

Analysis of Increase

Pay Increase	2
Program	86

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Folklife and American College Theater Festivals (\$60,000). Despite the tremendous popularity of the annual Festival of American Folklife on the Mall with some 600,000 visitors, and, the American College Theater Festival, funds for production costs are increasingly difficult to raise from private sources. An increase of \$60,000 is requested for these two projects to insure their continued success.

American Indian Program and General Division Support (3 positions; \$26,000). The success of the Indian program at recent Folklife Festivals encourages the Smithsonian to build toward a comprehensive presentation of American Indian art, music, crafts, and tribal lore, both historical and contemporary, by the time of the Bicentennial. The request is to hire a highly qualified American Indian (who has worked with the Institution on the program and been paid with other funds) to coordinate and direct all future Folklife Festival Indian participations and to aid in the establishment of small museums at tribal reservations, in consonance with the purposes of the National Museum Act, and to devise other programs of Indian awareness for the Institution at large. The request would also provide two clerical positions to assist with overall Division programs (\$26,000).

DIVISION OF PERFORMING ARTS

1971 Actual	\$ 215,000	
1972 Appropriation.....	\$ 203,000	<u>1/</u>
1973 Estimate	\$ 294,000	

The Division of Performing Arts is responsible for the presentation of programs dealing with our national aesthetic expressions, particularly as they evidence themselves in oral, music, or dance forms, and relate to the collections of the museums. By staging such events as the annual Festival of American Folklife the Division undertakes to extend and enliven the Institution's educational services to the public.

An increase of \$86,000 is requested for the Division of Performing Arts for FY 1973. A large part of this increase would be applied to the rising production costs of the annual Festival of American Folklife on the Mall, the American College Theatre Festival, and the American Indian Program. An amount of \$2,000 is needed for necessary pay.

Need for Increase

No increase, other than funds to cover necessary pay raises, was sought for the Division of Performing Arts in FY 1972. Yet during the course of the year the Division has continued to (a) strengthen the Festival of American Folklife, to the point where it attracts over 600,000 annual visitors and is thus the Institution's single most popular public event; (b) contribute towards and co-sponsor the American College Theater Festival, along with the John F. Kennedy Center for the Performing Arts and the American Educational Theatre Association; (c) run a resident puppet theater providing an educational experience to over 150,000 children and adults a year; (d) present year-round programs in folk and contemporary music, jazz, military bands, dance, and drama at various Smithsonian museums; (e) operate a Touring Performance Service which makes available to colleges, universities, and cultural organizations across the country a variety of programs which have proved themselves before Washington audiences; and (f) served a number of state governments, federal agencies, labor unions, and other institutions by providing advice on productions tailored to their performing arts interests.

Rising costs and the increasing difficulty of obtaining private support for a program that is no longer an experiment, but rather a well established and highly popular Smithsonian extension activity, require the Institution to ask for an increase in staff personnel and direct program support.

1. Folklife and American College Theater Festivals (\$60,000)

In the years since the inception of the Folklife Festival, the Institution has had some success in obtaining the major portion of Festival funding from outside sources. Last year, for example, substantial grants were received from the State of Ohio and certain AFL-CIO member unions for special exhibits. Although the Smithsonian will continue to search vigorously for such private support, it is very difficult to obtain it for anything except special exhibits or pavilions, which, in fact, add on to the more prosaic planning, production, housekeeping, and administrative costs which the Division has to absorb. Ideally, the Division should be in a position to attract outside support for authentic, high quality performances by being able to offer matching funding to State and private contributors. The \$35,000 increase requested for program support is a beginning in this direction.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

Similarly, although the Kennedy Center has had some success in attracting commercial sponsors for the College Theater Festival, experience has shown that it is difficult to obtain enough contributions to cover the Washington production costs (rehearsals, stage sets, lighting, stage hands, house management, etc.). Consequently, the Smithsonian, responsible as a co-sponsor for this part of the Festival, has had to absorb production expenses at the expense of other activities. Since the Institution shares the Kennedy Center's view that the College Theater Festival must be supported for the near future, until it can become a self-liquidating operation, \$25,000 is requested as a minimum production support figure, based on the experience of the last three years.

2. American Indian Program and General Division Support (3 positions;
\$26,000)

The Institution wishes to continue the well accepted Indian programs that have been an outstanding feature of the last two Folklife Festivals, with the objective of building up towards a comprehensive presentation of American Indian art, music, crafts, and tribal lore, both historical and contemporary, by the time of Bicentennial Year. Heretofore, the Division has literally had to patch together the Indian presentation from a wide variety of funding sources:--the Bureau of Indian Affairs (BIA), state historical societies, and tribal councils, to mention but a few. The time is overdue, therefore, for the Smithsonian itself to accept more responsibility for this part of the program by hiring a highly qualified American Indian to coordinate and direct all future Folklife Festival Indian participations. Funds are requested to add such a person to the staff who has worked closely with the Division in this capacity with funds provided by outside sources. In addition to Festival preparation, the coordinator would also be engaged in a year-round effort to aid in the establishment of small museums at tribal reservations, in consonance with the purposes of the National Museum Act, and to devise other programs of Indian awareness for the Institution at large.

An additional secretary and a clerk-typist are urgently needed for the Division to handle increasing correspondence, not only for the Division's own programs, but more especially for the great volume of inquiries from state and private cultural organizations requesting advice on folklife presentations and appropriate Bicentennial celebrations (\$25,000). These additional positions would give the Division a support staff of only three out of a total of ten positions. Funds for the requested three new positions total \$26,000.

OFFICE OF PUBLIC AFFAIRS

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>12</u>	<u>1</u>	<u>13</u>
11 Pers Comp	\$166	\$15	\$181
12 Pers Benefits	14	1	15
21 Travel	1	0	1
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing	46	10	56
25 Other Services	37	0	37
26 Supplies & Materials ..	3	3	6
31 Equipment		4	4
41 Grants			
TOTAL	<u>\$267</u>	<u>\$33</u>	<u>\$300</u>

Analysis of Increase

Pay Increase.....
 Program.....

8
 25

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Visitor Orientation and Other Services (1 position; \$25,000). Inquiries from the general public and the scientific community concerning the Institution's research, exhibits, and educational programs are increasing. A clerk-typist (\$8,000) is requested to help expedite the responses to these inquiries. Support funds for producing building guides and other visitor orientation materials are deficient and need to be increased (\$13,000). In addition, funds to modify some recording equipment used in producing the highly successful series "Radio Smithsonian" are needed (\$4,000).

OFFICE OF PUBLIC AFFAIRS

1971 Actual	\$ 247,000	
1972 Appropriation....	\$ 263,000	<u>1/</u>
1973 Estimate	\$ 300,000	

The Office of Public Affairs is responsible primarily for serving visitors to the Smithsonian and the public at large by communicating information about the Smithsonian through various media--radio, television, newspapers, popular and scientific periodicals, press releases, documentary films, the Smithsonian Calendar of Events, Dial-A-Phenomenon, and general information pamphlets and publications. Included in its presentations are the Torch newspaper, and the "Radio Smithsonian" now being heard on over 88 stations across the nation.

A program increase of \$25,000 is requested to produce visitor orientation films and other materials, provide support for answering public inquiries, and allow some equipment modification. In addition, \$8,000 are sought for necessary pay.

Need for Increase

The need to broaden the dissemination of information concerning Smithsonian programs arises from a sharply increased demand for information about the Smithsonian's museum and research programs as well as an expansion of

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

interest in the Institution's public exhibits and educational activities. Production of additional visitor orientation films for use within the Institution's buildings and for preliminary introductory materials for the hundreds of thousands of persons planning visits to the area, would enable the Office to more fully and effectively discharge its responsibilities in an era when visitations to the Smithsonian are increasing annually.

A portion of the requested increase would be used to employ a clerk-typist (\$8,000) to help expedite the response to public inquiries. In addition, to increase the production of films, building guides and other visitor orientation materials, support funds for printing, supplies and materials are requested (\$13,000). Another portion of the request (\$4,000) would be used to improve the programming for Radio Smithsonian through modification of the Ampex recorder.

SMITHSONIAN INSTITUTION SPECIAL PROGRAMS

This group of activities is considered to be of particular importance in implementing desired growth in the Institution's activities over the next several years. Some of these activities supplement the programs of the museums and galleries. For instance, opportunities are provided for outstanding pre-and post-doctoral investigators from across the nation to be selected for work under the supervision of the Institution's professional staff. Education services are provided by means of popular museum tours for school children and other education services. Other special programs provide the basis on which the Institution effects dramatic changes in its exhibits and research efforts. The exhibits program request is geared to complete one major exhibit on the "World of Living Things" in the Natural History Museum, and start another, "Of the People, By the People, For the People," in the National Museum of History and Technology, and plan the "Earthbound Benefits of Flight" exhibit for the National Air and Space Museum. The American Revolution Bicentennial program will continue the Institution's efforts to celebrate and portray the first two-hundred years of American history and what these developments may mean for the future. The environmental science program is in its second year as a coordinated Institutional effort to shed light on ecological problems in the nation, and the research awards request will enhance the Institution's ability to fund especially meritorious work of its professionals. The National Museum Act request is directed at strengthening the nation's museums by means of training and improved conservation, cataloging, and exhibits techniques.

AMERICAN REVOLUTION BICENTENNIAL PROGRAM

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>2</u>	<u>0</u>	<u>2</u>
11 Pers Comp	\$ 98	\$100	\$198
12 Pers Benefits	7	7	14
21 Travel	10	5	15
22 Trans of Things	3		3
23 Rent, Comm & Util ...			
24 Printing			
25 Other Services	160	238	398
26 Supplies & Materials ..	2	50	52
31 Equipment	120	200	320
41 Grants			
TOTAL	<u>\$400</u>	<u>\$600</u>	<u>\$1,000</u>

Analysis of Increase

Pay Increase	0
Program	600

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

A total of \$1,000,000 is being requested in FY 1973, and does not represent permanent commitments to the various bureaus' and museums' appropriations bases since the program will be phased out after 1976. The amounts indicated for various efforts are considered to be logical extensions of activity started in FY 1971 and FY 1972, or needed additions to bring about the desired national result by FY 1976.

Bicentennial Exhibition Construction and Facilities (\$490,000). This funding is to continue planning and design of "A Nation of Nations" (\$350,000), "Ecology-USA/200" (\$60,000), and to supplement regular bicentennial exhibits in the National Museum of History and Technology, National Portrait Gallery, and National Collection of Fine Arts (\$80,000).

Bicentennial Survey of American Art (\$250,000). This funding will extend various efforts: the inventory of american art (\$55,000); the catalog of american portraits (\$120,000); the three volume reference bibliography on american art (\$50,000), and the survey of folk traditions (\$25,000).

Outreach (\$210,000). For production and circulation of 45 bicentennial exhibitions by the traveling exhibition service, support funds are requested (\$10,000). To continue with project and facility development for the Anacostia Neighborhood Museum's exhibits workshop and vocational training program, \$200,000 are requested to match potential private funds.

Exposition for the Nation's Capital (\$50,000). These funds will allow the Smithsonian to begin cooperative planning with other organizations.

AMERICAN REVOLUTION BICENTENNIAL PROGRAM

1971 Actual	\$ 400,000
1972 Appropriation.....	\$ 395,000 <u>1/</u>
1973 Estimate.....	\$1,000,000

The Smithsonian Institution is preparing to play a central and major role in the celebration of the Bicentennial of the American Revolution. The Bicentennial presents an opportunity for a wide-ranging and creative use of the Smithsonian's great capabilities and resources, which are of a nature ideally suited to the occasion and the times. We welcome the challenge and believe that our program, which has as a theme The American Experience, will meet all expectations. We will offer imaginative and exciting events and, at the same time, we will make contributions that will continue to reward the general public and the scholarly community for many years to come.

The Bicentennial undertaking at the Smithsonian will involve almost every department, and range from an entire new museum building (the National Air and Space Museum) to such minor, but often crucial, matters as the cost of the services of a single consultant. Many of these costs are not encompassed here, in this request. They will be paid for, as far as possible, out of regular appropriations, and in some instances, the National Museum of History and Technology, for example, virtually all of the regular budget received between now and 1976-77 will go increasingly into Bicentennial related activities. The amounts requested in this special appropriation over the next few years will be used to make the extraordinary effort, above and beyond the Institution's normal level of operations that is called for by this special occasion. These appropriations will be used exclusively for activities that could not otherwise take place. Permanent commitment of personnel and other additions to the various Bureaus' and Museums' appropriations base are avoided. The program will phase out after 1976, but it is designed to produce accomplishments which will remain for an extended period of time, or in perpetuity, for the citizens. For this reason, the description of FY 1973 commitments totaling \$1,000,000 (or an increase of \$600,000 over FY 1972 federal appropriations) are summarized as though they may not extend beyond FY 1973. The amounts indicated for FY 1973 activities have been subject to intense internal management review, and are considered to be logical extensions of activity started in FY 1971 and FY 1972, or needed additions to bring about the desired national result by FY 1976. A summary breakdown of the requested FY 1973 funding is presented in Table I.

With the support of the FY 1971 and 1972 appropriations for this purpose, and with every possible commitment of the Institution's regular budget, we have made a strong beginning on the program itself. The work must be spread out over the intervening years, allowing lead time for the research, design, collecting, and construction which go into the production of major exhibitions, and for the nationwide information-gathering that will go into the Bicentennial Survey of American Art. Phased scheduling will assure completion of the various program components by the Bicentennial year.

This special Bicentennial funding serves dual purposes: it will normally pay for projects that are complete in themselves; and, in some cases, it will expand a special Bureau exhibit, or enrich it, for example, by the acquisition of unusual objects, or by enabling it to reach a wider national audience.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

In FY 1973, a total of \$1,000,000 (or a \$600,000 increase over FY 1972) is sought to permit the accelerated pace which must take place as the year 1976 draws near.

Need for Increase

1. Bicentennial Exhibition Construction and Facilities (\$490,000)

Under this appropriation are the two pivotal, major, Bicentennial exhibitions on the Mall.

A Nation of Nations will be located at the National Museum of History and Technology (NMHT). The purpose of this exhibit is to show how groups of immigrants created a new nation with a new identity. To minimize visitor inconvenience due to closed-off exhibit space, this exhibition is to be constructed in three phases. The first will deal with the wave of immigration in the 17th and 18th centuries; the second, with the basic life experiences that were common to each group (giving special attention to the experiences of native and minority groups); and the third, with the contributions of American political ideals, attitudes, technologies, and popular culture which formed a stable, but flexible, world community.

The concept, shape, and content of this exhibition have been determined, spatial requirements have been specified, some objects have been purchased, and experimental modular units are now being developed.

During FY 1973, \$350,000 will be needed for detailed planning and for some initial redevelopment of space. A "Nation of Nations" will be more than four years in the making--a period of time not unusual for an exhibition of this scale and originality. This exhibit will remain for years after the celebration ceases as a major focus for NMHT visitor attention. It is being designed so that modifications can take place periodically to update and modernize the content.

A second facet of the exhibition effort on Bicentennial themes in Smithsonian museums by 1976 will constitute the National Museum of Natural History exhibit Ecology-USA/200. This will be, in effect, one large multifaceted exhibition of unusual depth and richness. It will present the background of our present environmental dilemma. Designers, working closely with the Museum's scientific staff, have completed preliminary studies which promise a highly interpretive exhibition presenting a historical perspective of the various changes that have occurred such as: agriculture developing in response to the needs of our growing population; the effects of technological development upon our natural surroundings as America emerged as the principal industrial nation; and the impact on the country of urbanization. The special Bicentennial funding will pay for preparatory planning and design services, the acquisition of objects (which, of course, will become permanent additions to the national collections), and the production of traveling versions and filmed versions for national circulation (which will also record for posterity our 200th anniversary). In FY 1973 this exhibition will require \$60,000 to carry forward architectural planning and detailing and to construct and test exhibit units.

In addition to funds for these two major exhibits, \$80,000 are requested to supplement the regular costs of Bicentennial exhibitions at the National Museum of History and Technology, the National Collection of Fine Arts, and the National Portrait Gallery.

2. Bicentennial Survey of American Art (\$250,000)

We are at the end of two centuries of growth. We have an established record of achievement in technology and the sciences. But there are some large gaps and unrecognized achievements in our nation's knowledge of American cultural attainments and resources. This is not surprising in a nation as young as ours, that has been scientifically and technologically "on the move." Only our foremost thinkers acknowledge that our technology and our arts have a common breeding ground--the crafts and skills that have been woven into our diverse national character since 1776. The Bicentennial Survey of American Art will take stock of achievements on a national scale, enlisting the aid of organizations and individuals in every state. The Survey will be conducted by four Smithsonian bureaus--the National Collection of Fine Arts, the National Portrait Gallery, the Archives of American Art, and the Division of Performing Arts. Using the abilities of these offices to make a concerted effort, the Survey will point to the full scope of 200 years of cultural accomplishment, and reveal as never before the fusion of great talent that was necessary to create this country.

The National Collection of Fine Arts' Bicentennial Inventory of American Paintings Executed Before 1914 is a program to search for and record the whole range of American painting from the earliest years of our history to the present century. It will significantly extend the available resources for continued study of American art and history, and enlarge and deepen our understanding of both. The focus in the earlier years must be on obtaining paintings; recording raw data on paintings; locating other works; enlisting collector and organizational commitments to initiate search and record programs; and providing assistance to these projects. Concentration will then shift to processing the data accumulated into final record form.

The Inventory got off to a good start in FY 1971, when it issued the first of a series of mailings to 3,800 small museums, historical societies, and state and local arts councils inviting active participation. About 700 initial responses were received furnishing information about collections and promising all possible cooperation. Of these, some 300 are potential survey agents. In FY 1973 it is estimated the Inventory will need \$55,000 for operating expenses and temporary appointments of personnel.

The National Portrait Gallery is assembling The Catalog of American Portraits (CAP). This is a research resource which eventually will contain photographs and documentation on thousands of American portraits in public and private collections across America. It is developing in close cooperation with the National Collection of Fine Arts Inventory. During the Bicentennial years, the Catalog will complete documentation on portraits of Americans living between 1770 and 1790. An experimental program in Richmond, Virginia in FY 1971 discovered a great many hitherto unknown portraits and developed methods of investigation that are presently being used in other states. In FY 1973 CAP will have field researchers at work in the Carolinas, Georgia, Kentucky, and Tennessee, and \$120,000 will be utilized to supplement their activity.

The Archives of American Art has as its sole Bicentennial project a Bibliography of American Art, a comprehensive reference work in three volumes. The Archives also is working closely with the National Collection of Fine Arts and the National Portrait Gallery in developing this effort. It will make available an in-depth and scholarly listing not only of major works on American art, but also of important non-book materials. A temporary

staff has been set up and contributors are assigned sections of the bibliography. Each bibliographer is a specialist in the field of American art and will deal with an area directly related to his particular interest. In FY 1973 this special staff will require support of \$50,000.

The Roots of American Folk Culture program of the Division of Performing Arts is a systematic survey of folk traditions in music, dance, storytelling and crafts throughout the United States. This survey will cover urban as well as rural areas, and the contributions of indigenous as well as immigrant groups. The first results were seen in the 1971 Festival of American Folklife on the Washington Mall when Bicentennial funds allowed thousands of visitors to enjoy Northwest Coast Indian music, dance, arts and crafts. These performances were recorded on film. As part of the Roots effort, \$25,000 will continue services and research through FY 1973.

3. National Outreach (\$210,000)

The Smithsonian Institution Traveling Exhibition Service (SITES), administered by the National Collection of Fine Arts, will produce and circulate a total of 45 Bicentennial exhibitions during the period up to and including the Bicentennial year. These will be expressly for the Bicentennial celebration, in addition to SITES' normal annual activities. The objective of this plan is to make these exhibitions available at the lowest possible cost, in an effort to reach populations not normally served by touring exhibitions. The National Collection is therefore requesting funds to subsidize the production and the transportation costs involved. Each exhibition, when fully booked, will visit 12 locations during a two-year tour. Forty-five exhibitions have a potential of 540 installations; at this point the Bicentennial audience cannot be estimated, but will encompass a substantial portion of the Nation's population.

The subject matter will provide an overview of American history, science, technology, and art. Present planning calls for exhibitions organized into interrelated curricular units conceived around such central themes as "200 Years of American Transportation" or "A Nation of Builders -- A Visual History of American Engineering." In FY 1973 three experimental exhibitions, probably in an edition of more than one, will be produced and started tour at a cost of \$10,000.

One of the more unfortunate defects of museum "outreach" programs has been a failure to offer nationally useful and meaningful services to disadvantaged and minority populations. Now, of all times, the Smithsonian almost providentially has been endowed with a capability whereby this deficiency can be corrected. The Smithsonian's Anacostia Neighborhood Museum has pioneered the production and national circulation of exhibitions to these groups by dramatically involving them in the portrayal of minority contributions to American culture. "The Frederick Douglass Years" and "The Rat -- Man's Invited Affliction" are notable examples. Both can be termed community projects, and this museum now proposes to create an entirely new and appropriate kind of facility as a way for minority group members across the country to participate directly in expressing themselves through exhibits and related materials concerning problems which must form an important part of the Bicentennial program and the contemporary American scene.

The Anacostia Neighborhood Museum's Exhibits Production Center will be both an exhibits workshop and a vocational training facility. A preliminary design study, commissioned and completed in FY 1971, developed the concept to the point where an architect may now go to work

on final specifications. This process will be unusually simple because the Center will be housed in a pre-engineered "systems building" similar to those now being constructed for schools and light industry, providing the desired space at a substantially lower cost than conventional buildings. An extremely popular concept, the Center will produce exhibitions for nationwide circulation on such subjects as urban problems and the historical contributions of America's minorities. Some exhibitions will be designed for museums; others will be capable of reproduction in sets, for use in community centers, store-fronts, and other non-museum settings. One large private foundation is very much interested in this project, but because of the national economic importance and interest being placed on new ways to channel human productivity, it desires federal recognition and support. Matching funds will be employed for equipment, vocational training, and general operations. Preliminary discussions with the National Capital Parks Commission have resulted in a tentative agreement on a site four blocks away from the Neighborhood Museum's main building.

The Smithsonian will use this facility for the production of some of its Bicentennial exhibition units. To continue with project and facility development \$200,000 are requested to match potential private funds and put the Center in operation.

4. An Exposition for the Nation's Capital (\$50,000)

There will be a great increase in the number of visitors who will come to Washington during the year of the Bicentennial. They will encounter a bewildering variety of exhibitions, performances, and other activities. The Smithsonian will be the focal point, and proposes to work closely with the National Park Service, the government of the District of Columbia, and all other interested agencies and institutions, on ways to unify and render coherent these multiple experiences; \$50,000 are requested to begin cooperative planning.

TABLE I
SMITHSONIAN INSTITUTION
SUMMARY OF PROPOSED CENTRALIZED
BICENTENNIAL OF AMERICAN REVOLUTION ACTIVITIES
FY 1973

Bicentennial Construction and Facilities and Major Exhibitions

"A Nation of Nations" (National Museum of History and Technology)	\$ 350,000
"Ecology-USA/200" (National Museum of Natural History)	60,000
Supplementary Funding for National Museum of History and Technology, National Portrait Gallery, National Collection of Fine Arts planned Bicentennial Exhibits	80,000

Bicentennial Survey of American Art

Inventory of American Art Executed Before 1914(National Collection of Fine Arts)	55,000
Catalogue of American Portraits (National Portrait Gallery)	120,000
Bibliography(Archives of American Art)	50,000
Roots of American Folk Culture(Division of Performing Arts)	25,000

Outreach

Traveling exhibitions, SITES (National Collection of Fine Arts)	10,000
Exhibits Production and Training Center (Anacostia Neighborhood Museum)	200,000

Exposition for the Nation's Capital; Inter-Agency Planning, Administration

50,000

TOTAL \$1,000,000

ENVIRONMENTAL SCIENCES PROGRAM

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>8</u>	<u>0</u>	<u>8</u>
11 Pers Comp	\$116		\$116
12 Pers Benefits	10		10
21 Travel	38		38
22 Trans of Things	2		2
23 Rent, Comm & Util...			
24 Printing			
25 Other Services	63		63
26 Supplies & Materials..	24		24
31 Equipment	22		22
41 Grants			
TOTAL	<u>\$275</u>	<u>\$0</u>	<u>\$275</u>

Analysis of Increase

Pay Increase	0
Program	0

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Maintenance of Institutional Program. Congress first appropriated \$150,000 for coordinated environmental research at the Smithsonian in FY 1971. A mode of operations, sites, and problems to be studied were identified. In FY 1972 \$275,000 was appropriated for this program. Work is now underway on a variety of projects in carefully selected geographical areas using the staff resources of several of the Smithsonian science bureaus. No program increase is being sought for FY 1973 to allow time for program evaluation of areas of investigation where maximum scientific returns can be expected. Priority areas of investigation will be identified and the FY 1974 request will be geared to spur selected efforts.

ENVIRONMENTAL SCIENCES PROGRAM

1971 Actual	\$150,000
1972 Appropriation.....	\$271,000 <u>1/</u>
1973 Estimate.....	\$275,000

Amounts were appropriated in FY 1971 and 1972 for coordinated environmental research at the Smithsonian. This support enabled the separate bureaus of the Institution for the first time to develop jointly a plan to assemble and analyze biological and physical data on specific important ecosystems, with the goal of contributing to the prediction of the consequences of environmental change. Harmful ecological changes have often been attributed to man's influence, whereas research has sometimes shown that variation in natural cycles could be the cause. Thus, attempted remedies have been counter productive. The experience of the scientific staff and the accumulated collections of natural history specimens make the Smithsonian specially competent for team research. The FY 1971 amount was directed toward three activities: (1) the organization of an interdisciplinary program and establishment of a continuing mechanism for its operation; (2) the selection of sites of highest priority for study; and (3) the implementation of interrelated studies of these sites.

No program increase is being sought for FY 1973 to allow time for program evaluation of areas of investigation where maximum scientific returns can be expected. Priority areas of investigation will be identified and the FY 1974 request will be geared to spur selected efforts.

During FY 1972 research is being directed to the following problems. This effort will continue in FY 1973.

--The National Museum of Natural History is pursuing basic biological studies of the marine fauna of Caribbean Panama. Also, Glovers Reef, in British Honduras, was selected as a primary site for intensive reef study and this work has been begun in the current year. Both of these projects are aimed at treating specific tropical marine biotopes as systems and thereby ultimately allowing predictive and management models of these complex and threatened environments to be built. As the environments involved are relatively poorly known, analyses of species composition, abundance, and interaction are prerequisite to more advanced investigations. Ultimately, electronic data processing will be employed and modeling techniques under development for simpler biological systems will be adapted to the investigations.

--The National Zoological Park, in coordination with the Smithsonian Tropical Research Institute, is conducting a radio tracking study in Panama to compare, among populations of two sympatric species of sloth, the relationship between energy utilization and social organization. This project will utilize radio tracking to include the iguana as well. Sloths, howler monkeys, and iguanas represent the dominant vertebrate biomes in the neotropical rain forest. Since all three genera are primary herbivores, an understanding of their numbers, spacing, recruitment, and turnover is essential for an interpretation of the neotropical rain forest ecosystem.

--A cooperative long-term study of natural fluctuations on Barro Colorado Island, Panama, involving measurement, experimentation, and

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

modeling of the environment has been initiated. This study is a segment of a larger program which will generate meaningful comparisons between various environments being monitored under this and other programs. There is also a Tropical Marine Environmental Monitoring Project in Panama. This project monitors the physical fluctuations of the Pacific and Atlantic offshore environments in Panama Bay and the Caribbean at specific points, continuously, and in identical manner over a number of years. Also involved are the Atlantic and Pacific intertidal zones, to compare physical stability and predictability with that of the offshore environment. Biological monitoring of intertidal organisms will determine if these can be correlated to the physical perturbations of their immediate and or more generalized surroundings.

--The Radiation Biology Laboratory site at Point Barrow, Alaska, has been in operation since April 1971, measuring the total short wave solar radiation incident there. The purpose of this site is to determine the influence of latitude, season, and the atmospheric influence on the color quality of the light received at the earth's surface. This information is to be used to help understand plant and animal responses to daylight change by comparing the incidence of arctic light with that recorded from other stations. In this way, we can begin to determine how light affects the reproductive and other physiological processes in plants and animals. This data will be of direct concern to the Tundra Biome Project, a part of the International Biological Program, and to the National Oceanographic and Atmospheric Agency which will correlate the SI spectral quality measurements with the atmospheric particle measurements. This will enable them to determine how the particulate matter in the atmosphere influences natural daylight.

--A project is underway to compare phosphorus metabolism of algae under heterotrophic and autotrophic conditions in order to be able to develop models which would be useful in understanding the problems created by the pollution of lakes, rivers, and estuaries with high levels of organic materials and phosphate. This is a laboratory study which is supplemented and coordinated with field studies at the Chesapeake Bay Center for Environmental Studies.

--The Smithsonian Astrophysical Observatory will examine and model the relationships between insolation and atmospheric variables that may be responsible for insolation change. They will also explore requirements and determine instrumentation for measuring atmospheric parameters in the interdisciplinary investigations at the various prime sites involved in the overall program of Smithsonian environmental studies. The Astrophysical Observatory at Mt. Hopkins, Arizona, has sufficient equipment so that relatively little needs to be added to the site to allow a broad investigation of the causes of the insolation variations. The Radiation Biology Laboratory will assist by installing a solar monitoring detection unit at Mt. Hopkins.

This interdisciplinary and team plan of work is given high priority by the Smithsonian and is consistent with the recommendations of the International Biological Program and with Public Law 91-438.

MAJOR EXHIBITIONS PROGRAM

No. of Perm Pos	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
	<u>0</u>	<u>0</u>	<u>0</u>
11 Pers Comp			
12 Pers Benefits			
21 Travel	\$5	2	7
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing	25	10	35
25 Other Services	310	100	410
26 Supplies & Materials ..	65	50	115
31 Equipment	120	88	208
41 Grants			
 TOTAL	 <u>\$525</u>	 <u>\$250</u>	 <u>\$775</u>

Analysis of Increase

Pay Increase	0
Program	250

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Preparation of Three Major Exhibitions (\$775,000). Funds are requested to complete the "World of Living Things," an environmental exhibit begun in FY 1972 (\$250,000); to design and produce "Of the People, By the People, For the People," an exhibit in the National Museum of History and Technology to show relationships between people and their government (\$500,000); and to plan "The Earthbound Benefits of Flight," an exhibit for the National Air and Space Museum to show the applications on earth of new knowledge and technology resulting from air and space flight and exploration (\$25,000).

MAJOR EXHIBITIONS PROGRAM

1971 Actual	\$ 0
1972 Appropriation...	\$ 525,000
1973 Estimate.....	\$ 775,000

The Smithsonian's base appropriation for exhibits, primarily in the Office of Exhibits, is largely absorbed by the maintenance and upgrading of existing exhibits, the design of new exhibits, and a modest program of changing special exhibits. This appropriation has remained relatively static for the last several years growing only by pay supplements to meet part of the costs of pay raises. Absorption of a part of higher pay costs by the office, combined with the greatly increased costs of supplies, materials, printing, and contractual services required to produce exhibits, has virtually halted the Smithsonian's ability to continue the development of its permanent exhibits program. New permanent exhibits, space for which exists in present Smithsonian buildings, will require new nonrecurring funds for construction and installation.

Funds are being requested to complete the exhibit which received initial funding in FY 1972, "The World of Living Things." In addition, the brochure submitted as a supplement to the budget request identifies and describes two new proposed permanent exhibits of unusual timeliness, significance, and public interest. These are titled "Of the People, By the People, For the People" (an exhibit which will be developed in the National Museum of History and Technology) and "Earthbound Benefits from Flight" (to be prepared for the National Air and Space Museum).

"The World of Living Things," begun in FY 1972 with \$525,000 will require \$250,000 to complete in FY 1973. The exhibition should be ready for public opening the latter half of FY 1973. This is a major effort to interpret the "laws of nature," and will include both an introduction to ecology and the exposition of worldwide environmental balances and imbalances.

"Of the People, By the People, For the People" will be a major exhibition designed to interpret how the Government affects the lives of the people and how the people shape their government. It will deal with such matters as the ballot, expansion of suffrage, right of petition, communication, the growth of public schools, the government's role in support of research, regulations dealing with the welfare of the people, transportation, food, shelter, and security. It is estimated that a total of \$500,000 will be needed in FY 1973 to produce this exhibit, of which \$275,000 will be available as a result of the completion of the "World of Living Things."

"The Earthbound Benefits from Flight" is proposed as a major exhibition directed at two important goals: to exemplify the many applications on earth of the extensive knowledge generated in the course of developing air and space flight; and to communicate to the visiting public the possibilities for future applications. Estimated total production costs are \$423,000, of which \$25,000 are being sought in FY 1973 for planning. Funds for the design and production of the exhibit would be requested in FY 1974.

NATIONAL MUSEUM ACT

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>3</u>	<u>0</u>	<u>3</u>
11 Pers Comp	\$25		\$25
12 Pers Benefits	2		2
21 Travel	20		20
22 Trans of Things	17		17
23 Rent, Comm & Util ...	18		18
24 Printing	45		45
25 Other Services			
26 Supplies & Materials ..	9		9
31 Equipment	14		14
41 Grants	<u>450</u>	<u>400</u>	<u>850</u>
TOTAL	<u>\$600</u>	<u>\$400</u>	<u>\$1,000</u>

Analysis of Increase

Pay Increase	0
Program	400

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Support for the Nation's Museums (\$400,000). Public Law 91-629 approved December 31, 1970, reauthorized appropriations for the National Museum Act through fiscal year 1974 and funding of \$1,000,000 to the Smithsonian Institution each year. Of this amount \$600,000 was granted by the Congress for fiscal year 1972, of which \$100,00 were transferred to the National Endowment for the Arts and to the National Endowment for the Humanities as required by the authorizing legislation. The first meeting of the Advisory Council was held in November 1971 to determine priorities and review requests for funding. Eight projects have been funded and the balance of the appropriation will be awarded in February 1972.

The requested \$1,000,000 funding in fiscal year 1973, an increase of \$400,000, will permit the Smithsonian to support basic needs of the Nation's museums including cataloging and data access systems, museum laboratory centers for conservation and exhibits preparation, training of museum personnel, research in museum techniques, the preparation of instruction manuals, and other aspects of the National Museum Act.

NATIONAL MUSEUM ACT

1971 Actual	\$	0
1972 Appropriation	\$	600,000
1973 Estimate	\$	1,000,000

Public Law 91-629 approved December 31, 1970, reauthorized appropriations for the National Museum Act through fiscal year 1974 and funding of \$1,000,000 to the Smithsonian Institution each year. Of this amount \$600,000 was granted by the Congress for fiscal year 1972.

Funds appropriated to the Smithsonian Institution for the implementation of the National Museum Act will be made available, primarily by grants and contracts, to museums, professional associations, and individuals. Such funding will be made in concert with the National Museum Act Advisory Council appointed for this purpose by the Smithsonian Institution. The membership of the Advisory Council encompasses the principal museum disciplines -- art, science, and history -- and is broadly representative of all regions of the United States. The Council will advise and assist the Secretary in determining priorities and assessing the quality of individuals and programs seeking support under the Act.

The Advisory Council met for the first time on November 10, 1971, to develop the procedures for granting funds. The members of the Council agreed that funds should be awarded to projects which advance the Museum profession at large through research, publication, training or professional assistance. The programs established at this meeting are:

- I. Technical Programs -- The increased demand on museum services and facilities has introduced many technical changes and requirements within the profession. The Advisory Council has identified three major areas where greater technical knowledge and skills are essential: a) exhibit techniques; b) conservation techniques; c) archival, library, and research resources.
- II. Curatorial/Interpretive Programs -- Museums are invaluable sources of information and research. The quality of a museum depends upon its ability to communicate information and knowledge to the community at large. The Advisory Council acknowledges the continual need for museums to study and develop their educational and interpretive resources. The following areas of study were developed: a) studies in specific subject areas provided the project has implications for the profession; b) exhibit evaluation and experimentation; c) interpretive and educational programs; and, d) studies of museum practices and functions.
- III. General Management Programs -- Recognizing that good management is essential to the overall success of any museum, the Advisory Council cited the need for continued training, research, and publication concerned with practices within the areas of general management, registration, and management of collections, and the design and planning of physical facilities.

- IV. Professional Assistance Programs -- The Council reaffirmed the importance of technical aid and assistance for museums. Certain programs are essential to the continued growth of museums, such as: a) services that enable existing museums to respond more effectively to their community; b) seminars and conferences that encourage greater communications among personnel in museums and between museums and related organizations.

Eight proposals in these areas have been funded to date. Four of the eight projects were in the area of training museum personnel: 1) A series of five different training workshops for historical museum personnel; 2) Twenty work projects in conservation for graduate students; 3) A program for the development of a curriculum in museology; and 4) A six-week intensive seminar in museum administration. The remaining four proposals funded provide broad support for the profession: 5) A publication of the development of a national program on resources and resource-management in systematic biology; 6) A one-year pilot project to establish a consultant service for small historical museums whose budgets are less than \$50,000 per year; 7) Support for the U. S. Committee of the International Council of Museums; and 8) A publication on historical preservation, agencies, and museum practices.

Forty proposals have already been submitted to the Advisory Council; another twenty-four known applications are in preparation. The total sum of these applications exceed two million dollars. In addition, over 300 inquiries have been received by the Office of Smithsonian and National Museum Programs. In February, 1972, the Advisory Council will meet to review and award the balance of this year's appropriations.

Based upon the positive response of the museum profession to the National Museum Act, the quality of the specific requests, and the great needs of the profession, funding at the full \$1,000,000 level will permit the Smithsonian to support fully all aspects of the National Museum Act as conceived and requested.

ACADEMIC AND EDUCATIONAL PROGRAMS

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>22</u>	<u>2</u>	<u>24</u>
11 Pers Comp	\$144	\$29	\$173
12 Pers Benefits	17	2	19
21 Travel	7		7
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing	3	2	5
25 Other Services	487	24	511
26 Supplies & Materials ..	7	5	12
31 Equipment	12	11	23
41 Grants			
TOTAL	<u>\$677</u>	<u>\$73</u>	<u>\$750</u>

Analysis of Increase

Pay Increase	8
Program	65

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Elementary and Secondary Education (2 positions; \$65,000). Two junior grade staff associates (\$23,000) are requested to extend the Institution's capability to produce school tours in the National Museum of History and Technology and the National Museum of Natural History. In addition, \$42,000 support funds are urgently sought to help produce educational materials, filmstrips, and cassettes to be used by children in the classroom or home.

ACADEMIC AND EDUCATIONAL PROGRAMS

1971 Actual	\$596,000
1972 Appropriation	\$674,000 <u>1/</u>
1973 Estimate	\$750,000

A major Smithsonian objective is to make its resources for learning available to the formal education community and to the general public. These efforts take the form of programs in higher education, seminar activities, and offerings at the elementary and secondary education level.

Since 1965 the Smithsonian has offered support under its programs in higher education to 93 Ph. D. candidates and 83 postdoctoral investigators to enhance their ability as scholars and teachers through collaboration and study with the Institution's research staff. Over 50 undergraduate and first- and second-year graduate students have been offered the opportunity to consult the Institution's research staff and collections for short periods. These opportunities are extended both to strengthen the research capabilities of the Smithsonian and to make available to the scholarly and scientific community the Institution's specialized resources.

Seminar activities fall into three major program components: the International Symposia series; major colloquia, often in cooperation with other institutions of learning; and annual interdisciplinary lecture series. In 1973 the Smithsonian's Fifth International Symposium will be held as part of the worldwide tribute to Copernicus on his 500th birthday. This will be in co-sponsorship with the National Academy of Sciences and the cooperation of UNESCO.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

Elementary and secondary education activity includes the popular escorted tours for schools, the preparation of teaching guides, lectures, and audio-visual materials, and other services. Public use of the educational facilities of the Institution is growing rapidly at all levels of training.

A program increase of \$65,000 is requested for the elementary and secondary education activities. Also requested are \$8,000 for necessary pay increases.

Need for Increase

Two positions and \$23,000 are requested to increase the school tours provided by the Smithsonian to area primary and secondary schools. In addition, \$42,000 are sought to develop kit materials, take-home publications, film strips, and pilot teaching cassettes, both for use as adjuncts to the school tours program and for loan to schools.

The two new positions are for junior grade staff associates to develop new tours, train the volunteer docents who conduct the tours, and help relieve the scientific staff in answering special requests. One staff associate would be assigned to the National Museum of History and Technology to develop new tours in American history in preparation for Bicentennial Year. Emphasis will be placed on creating tours with simple supplementary materials which, after testing at the Smithsonian, might be circulated to schools across the nation.

The other staff associate would be assigned to the National Museum of Natural History to develop inter-disciplinary tours aimed at teaching ecological principles and environmental problems, rather than the more traditional isolated subject area tours. Examples under consideration include the demonstration of delicate web-of-life or "food chain" relationships in a closed ecological system, camouflage and mimesis as survival adaptations in the plant and animal kingdoms, and the role of climate or day versus night in the establishment of ecological niches.

The expansion will result in greater opportunities for students to learn through museum experiences. The Institution enjoys an almost endless supply of volunteer docents, but lacks the staff to supervise them and train them to conduct new tours and to develop other educational activities. The requested increase will therefore have a significant multiplier effect, increasing the number of trained docents, which in turn increases the number of tours offered, school visits scheduled and students served. (See the accompanying figures 1, 2, and 3). Increased numbers of volunteers and staff associates will see that much more effort is expended to update and vary the tours, and to involve greater experimentation with new techniques. Without increases in personnel and funding resources the Smithsonian will fall short in its obligations to respond to increasing demands for external educational services. The demands are present for more direct contact with teachers as well as students in the school communities, and these can be responded to with an increasing number of teacher workshops.

Beyond these staff associates, which represent the heart of the Smithsonian people-to-people educational efforts, there is an urgent need to strengthen the support funds available for production of classroom and curriculum oriented materials. Of particular interest in FY 1973 will be experimentation with the visual cassette, a new technological medium of potentially great educational use in the future in both school and home study.

Figure 1 -Growth of subject matter tours and trained volunteers

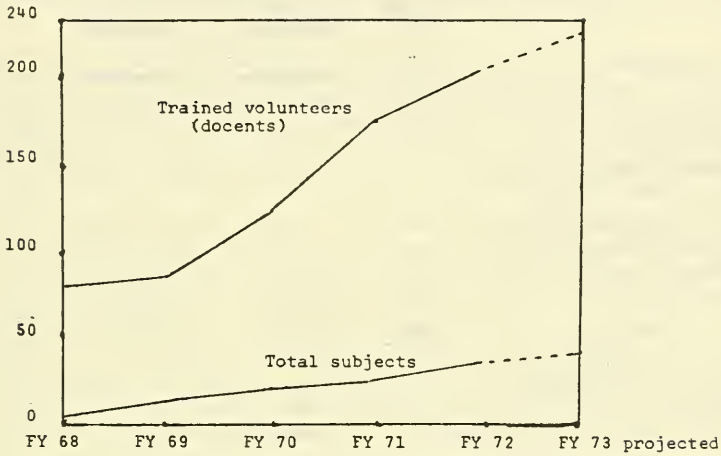


Figure 2 -Number of students serviced by elementary and secondary school tours

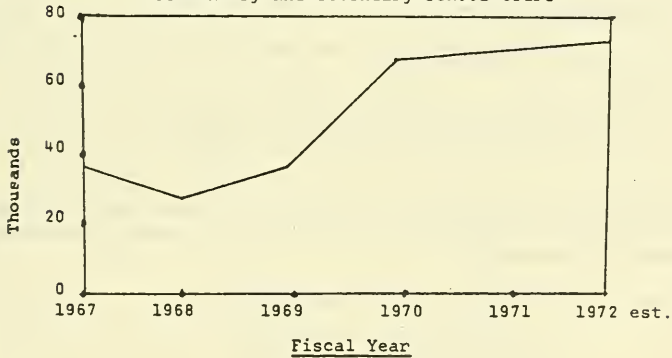
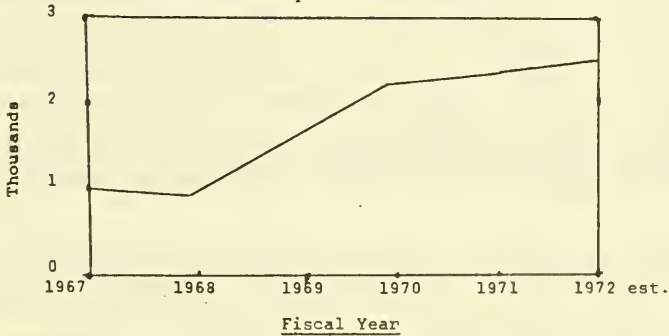


Figure 3 -Number of elementary and secondary School tours provided



RESEARCH AWARDS PROGRAM

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>0</u>	<u>0</u>	<u>0</u>
11 Pers Comp			
12 Pers Benefits			
21 Travel			
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing			
25 Other Services			
26 Supplies & Materials ..			
31 Equipment			
41 Grants	\$425	\$50	\$475
TOTAL	<u>\$425</u>	<u>\$50</u>	<u>\$475</u>

Analysis of Increase

Pay Increase	0
Program	50

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Multi-Year Funding and Inflation (\$50,000). The Research Awards Program funds worthy research projects not funded either by the regular plans of operation of the Smithsonian's science bureaus or by outside agencies. Since its inception in FY 1966, 276 proposals have been funded and there have been more than 200 publications in the fields of biology and anthropology directly attributable to this support. The program also has enabled Smithsonian scientists to engage in productive field research with colleagues from other institutions. An additional \$50,000 is requested to help fund multiyear awards for better stability, continuity, and planning of research. This additional sum will also help to combat the higher costs of basic research brought about by past inflation in the costs of laboratory supplies, equipment, and services.

RESEARCH AWARDS PROGRAM

1971 Actual	\$400,000
1972 Appropriation	\$425,000
1973 Estimate	\$475,000

Prior to FY 1966, the Smithsonian Institution received funds from the National Science Foundation (NSF) for research projects of individual staff members. In the FY 1966 appropriation, the Congress prohibited the NSF from making grants for scientific research to other Government agencies. The NSF instituted a further limitation that it would no longer make grants to any agency or institution receiving direct federal appropriations. The Research Awards Program was begun in FY 1966 by an appropriation of \$350,000 to the Smithsonian Institution for the purpose of financing new or continuing research projects formerly eligible for support from the NSF. Funding for the program increased to \$400,000 in FY 1967 and in FY 1972 it was increased to \$425,000.

Proposals are submitted each year by members of the Smithsonian Institution staff to support new and innovative research. All proposals have undergone a careful scientific or scholarly review in their respective bureaus before they are reviewed by an Advisory Committee of scientists from outside the Institution. Projects are selected on the basis of their showing an imaginative and exciting approach to research and scholarship efforts that could not normally be carried out with regularly budgeted departmental funds.

Need for Increase

For FY 1973, an increase of \$50,000 is requested to help fund multi-year awards and offset inflation in the cost of supplies, materials, and other items.

In FY 1972, members of the Smithsonian staff submitted proposals for funding up to three years in order to provide for better stability, continuity, and planning of research. There were 75 proposals received for FY 1972 amounting to \$1,674,382, of which 42 were funded in the amount of \$425,000. Advance commitments have been made for \$296,671 to second-year funding and \$106,972 to third-year funding. Thirty-three proposals were rejected. Many were deemed worthy, but funds were not sufficient to fund them.

The Research Awards Program is intended to cope with a serious problem confronting many scientists who wish to undertake non-routine fundamental research of the kind normally undertaken by university research scientists but which cannot be supported from the federal "Salaries and Expenses" appropriation. The large number of worthwhile proposals that were not funded in FY 1972, and in previous years, is of grave concern to the Institution. This concern is based on the fact that the work supported by the Research Awards Program is often the best of the Institution's productivity and the reason for acquiring scientists of the highest competence and imagination. If the Smithsonian cannot provide this kind of support, it might not attract high caliber scientists, nor retain them. Further, the program serves as an important means whereby scientists of the Smithsonian Institution may engage in collaborative field research with colleagues located in other institutions. Many opportunities for participation in expeditions and other field projects would be lost were it not for the Research Awards Program providing modest but essential, research assistance. The problem affects all the research bureaus.

DOCUMENTATION AND CONSERVATION

Museum collections, including artifacts, specimens, and works of art, are primary resources in the functions of exhibits display and research. As the curator of the National Collections, the Smithsonian houses the greatest and richest array of these resources in the nation. These must be conserved. But there are other document and information files related to these resources which are important to the public and scholarly understanding of what the collections reveal about man's technology, culture, and environment. These materials and files must be systemized, conserved, cataloged, and made more accessible. The data and information must be banked in such a way that it may be retrieved for study in conjunction with the specimens and artifacts. These "basic needs" consist of related photographic documentation, acquisition and archival information, and historical facts, as well as conservation data on physical and chemical characteristics.

The departments within the Smithsonian whose principal functions are to organize, preserve and conserve these papers and materials are:

- The Conservation Analytical Laboratory which determines, through scientific analysis, the physical and chemical nature of objects, adds this dimension to the knowledge of the objects, and guides the various museums in their artifact conservation and preservation methods.

- The Smithsonian Archives which serves as the official memory of the Institution, charged with locating, identifying, and arranging for the handling, care, and use of the official records, and other material relating to the Smithsonian and its programs.

- The Smithsonian Institution Libraries which provide cataloged and indexed collections of published materials that help to identify artifacts, objects, and specimens, and to describe the ideas they exemplify.

--The Registrar's Office which maintains the basic records on the details of acquisition of the collections and their provenance.

--The Photographic Services Division through whose services a visual record of appearance and conditions of objects can be studied, preserved, and presented in books, documents, and exhibits throughout the world.

The Institution today finds itself sadly deficient in its capability to cope with the enormous amount of document restoration, preservation, and artifact conservation work that needs to be done. This work is associated with the past and present growth of collections and collections related records. Many of our basic systems and resources in this area are obsolete, are manually operated, and are costly to maintain. Tens of thousands of valuable records are so deteriorated they need immediate attention, either through restoration processes or microfilming. The Institution's central artifact conservation facilities are operating with severe space and resource constraints. Substantial improvement needs to be made in the Institution's general capabilities for processing objects and records.

The Smithsonian's goal in stressing this activity over the new few years is to reach a level of funding that allows for major improvements to be made in the performance of conservation and documentation duties. The request is geared to strengthen initially the record preservation and restoration processes. The second major phase, which will be presented in the FY 1974 budget submission, will be the establishment and implementation of improvements in the area of conservation of the collections. As regards conservation, present investigations indicate that space devoted to conservation work should increase by about 60,000 square feet, and annual operational funding by about \$750,000 in order to constitute an adequate program for improved care of the National Collections. This present request incorporates only minor funding increases for conservation personnel and equipment for the central laboratory and represents a holding action until the Institution's space and equipment needs can be more thoroughly examined, and until some progress has been made in correcting the deficiencies related to the first step in the collections management process, i. e., the acquisition and documentation responsibilities.

The following sections speak to the individual requirements of the organizational units mentioned above.

DOCUMENTATION AND CONSERVATION
CONSERVATION ANALYTICAL LABORATORY

	<u>Base</u> <u>1973*</u>	<u>Increase</u> <u>Requested</u>	<u>1973</u> <u>Estimated</u>
No. of Perm Pos	<u>13</u>	<u>3</u>	<u>16</u>
11 Pers Comp	\$132	\$32	\$164
12 Pers Benefits	11	3	14
21 Travel	8	0	8
22 Trans of Things			
23 Rent, Comm & Util			
24 Printing	1		1
25 Other Services	20		20
26 Supplies & Materials	10	2	12
31 Equipment	8	66	74
41 Grants			
 TOTAL	 <u>\$190</u>	 <u>\$103</u>	 <u>\$293</u>

Analysis of Increase

Pay Increase	5
Program	98

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Conservation of Collections (3 positions; \$98,000). A program review of conservation needs for the Institution is currently under way. Space, personnel, and other support requirements necessary to cope with the enormous backlog of work and flow of new objects, are being evaluated. When these requirements are delineated they will be presented for budget consideration. The amount sought in this budget is geared only to help keep the general situation from deteriorating. In December 1971 as part of the Institutional review, the Smithsonian Council stated at its semi-annual meeting, "The functions of accessioning, curation, conservation, and collection based research are interdependent. We believe that expansion of facilities for conservation and research related to conservation is urgent. More adequate space and new instrumentation for the CAL is of high priority." The Smithsonian Council is an independent advisory body composed of twenty of the Nation's leaders in art, history, museology, and sciences. A long-run solution is being developed which will allow the conservation activities to perform work on newly acquired materials, make inroads into the Institution's backlog of needs, and strengthen the analytical work between curators and conservators. Space and logistics are an important part of the proposed development, and new capability must be established which reflects the interdependencies of collections research and conservation efforts.

The FY 1973 request is for a fumigation technician and two conservators (\$30,000), major equipment for outfitting some additional space (\$64,000), and other materials (\$4,000).

DOCUMENTATION AND CONSERVATION
CONSERVATION ANALYTICAL LABORATORY

1971 Actual	\$162,000
1972 Appropriation...	\$187,000 <u>1/</u>
1973 Estimate	\$293,000

The Conservation Analytical Laboratory (CAL) was established in 1963 to serve the museums of the Smithsonian Institution. Staffed by conservators and scientists, it ascertains and advises on the suitability, for artifacts displayed or in storage, of environmental conditions found in the buildings and suggests remedial action if necessary. Based upon examination or analysis, advice is given to curatorial units on conservation procedures for specific objects. Objects which present special problems or require more specialized equipment than is available in these units are treated in the central laboratory.

Analyses of objects or their materials (e.g. pigments, fibers, alloys or corrosion products) by advanced instrumentation serve to determine appropriate conservation procedures or to provide museum archeologists and historians with basic research data concerned with dates, attribution, and ancient production methods. Commercial products proposed for prolonged contact with artifacts (such as storage fumigants) are examined for suitability.

Shortages in the conservation program of the Smithsonian are acute, in terms of space, personnel, and operating support. A concentrated effort in rectifying these deficiencies must be made in the very near future. An Institutional plan for the general strengthening of these activities is being developed, and will be presented for Executive and Congressional approval and funding when completed. An increase of \$98,000 (including three positions and \$30,000) is requested for FY 1973 to allow the Institution to maintain basic services and to provide for some critical needs. In addition, \$5,000 are being sought for necessary pay.

Need for Increase

Accessions of artifacts number about 130,000 per year. Some single accessions represent hundreds of objects. Many of these are invaluable and a large portion require immediate and extensive treatment to forestall calamitous decay. If only thirty minutes were applied to each newly acquired object, this would represent 32 man years of necessary conservation work each year, exclusive of the backlog of attention which should be given to objects acquired in the past. Central staffing and space needed to cope adequately with the preservation and conservation of the Smithsonian's collections is estimated at thirty conservators, supported by fifteen scientists, and occupying 60,000 square feet of well-outfitted laboratory space.

The central laboratory (CAL) now has three conservators and five scientists for every kind of task; other units in the National Portrait Gallery, National Collection of Fine Arts, and the Freer Gallery total about six conservators and five scientists whose efforts are focused on specialized needs in art. The CAL occupies a desperately overcrowded 2,600 square feet. In FY 1971, with limited staff and space, it treated 358 objects (varying in nature from archeological to space-age) derived from bureaus. The amount of manpower and facilities devoted to general Institution conservation tasks are woefully inadequate.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

The requested increase of \$98,000 can be utilized effectively with the space available. The space problem for treatment must be solved. The \$98,000 will be used to alleviate the following problems:

1. Fumigation Facility (1 position; \$8,000)

Over the last year, thirty sightings of various insect groups were made. To cope partially with the problem of artifact infestation, the Institution's facilities have recently been expanded and made operational. These facilities are important because many objects arrive verminous and can contaminate the buildings. For FY 1973, an operating technician (\$8,000) will be required.

2. Accumulating Conservation Shortages (2 positions; \$26,000)

Program growth in museums and galleries has brought great pressures to bear on the current CAL staff. Two conservators (\$22,000) are needed to help with the workload, along with funds for chemicals, supplies and other support (\$4,000).

3. Conservation Equipment (\$64,000)

As a stopgap measure, some minor space is being loaned by the National Museum of History and Technology on an emergency basis. In FY 1973, funds are requested for the following:

--purchase and installation of a modern spectograph which will reduce by one-half the sample-size necessary for analytical work and double the output of the staff (\$17,000).

--purchase and installation of modern energy-dispersion detection apparatus capable of much greater output (\$47,000). Present methods and equipment for frequency dispersion analysis (using X-ray florescence) are obsolescent, time consuming, and costly.

The request presented here is considered modest in light of the level of work that soon must begin in the Institution. But it will sustain the conservation function until solutions to the space problem can be found.

DOCUMENTATION AND CONSERVATION
SMITHSONIAN ARCHIVES

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>6</u>	<u>2</u>	<u>8</u>
11 Pers Comp	\$60	\$25	\$85
12 Pers Benefits	5	2	7
21 Travel	1	1	2
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing			
25 Other Services	3	15	18
26 Supplies & Materials..	2	4	6
31 Equipment	1		1
41 Grants			
TOTAL	<u>\$72</u>	<u>\$47</u>	<u>\$119</u>

Analysis of Increase

Pay Increase	8
Program	39

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Consolidate, Catalog, and Process Documents (2 positions; \$39,000). In strengthening the overall Institutional capability at organizing, assembling, and making accessible the valuable records and materials in its possession, the Archives provides the central focus for a strong effort in preserving and systematizing documents for microfilming. Very few resources are presently available to undertake this task. In FY 1972, indexing and search procedures are being developed. The FY 1973 increase for two positions (\$19,000), an archivist and a technician, and support funds (\$20,000), will serve to implement search, selection, and retrieval systems for documents which need treatment, preserving, or microfilming. Units to be initially involved are the Office of the Registrar, the Libraries, and the central Archives.

DOCUMENTATION AND CONSERVATION
SMITHSONIAN ARCHIVES

1971 Actual	\$ 59,000
1972 Appropriation ...	\$ 70,000 <u>1/</u>
1973 Estimate	\$119,000

The Smithsonian Archives is the official memory of the Smithsonian Institution and a valuable research resource for scholars in the history of American science in the 19th century. Exclusive of materials located in the research and curatorial areas of the Smithsonian (which over the next few years should be identified and protected), the Archives' current holdings amount to over one million documents from the 1830's to the present. Within currently limited resources, the Archives' staff identifies permanently valuable records throughout the Institution, preserves them for administrative, legal, and fiscal value, and provides service on these records to Smithsonian staff. This constitutes the Archives' management or service function. The Archives also makes available and interprets its holdings to the scholarly community, an activity which makes the greatest demands upon the professional capacity of the staff.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

The request for FY 1973 is meant to improve substantially the Archives' ability to organize, preserve, and make accessible the considerable volume of important historical records associated with the development of science, history, and art over one hundred years. In FY 1972, work is being completed on developing a coordinated approach and system for materials in various units, the Registrar's Office, records in the central Archives, and then extending the work to the Libraries. The FY 1973 request will begin to implement the developed procedures. A portion of this effort is to be directed at searching out and identifying the various documents which need attention. A portion is to be devoted to the preservation efforts (lamination, preparation for microfilming, etc.). A total of two positions and \$39,000 are requested for this program. An additional \$8,000 are sought for necessary pay increases.

Need for Increase

1. Consolidate and Catalog Documentary Collections (1 position; \$15,000)

Over the last two or three years the Archives' staff made some progress in making accessible holdings in the central Archives by processing some 2,000 cubic feet of archival records. This represents about 10% of the work effort that needs to be accomplished across the Institution's holdings. The culmination of the completed work was publication of a guide to the Smithsonian Archives. This project established the basic approach. But the level of effort is not sufficient to keep abreast of incoming materials and to make inroads into the backlog of documents accumulated over the last one hundred years.

One additional archivist (\$11,000) and support funds (\$4,000) are requested to begin to organize and gain control over the balance of the records and documents in the Smithsonian. The work will involve searching out, identifying, and preserving valuable records in areas which to date have remained relatively untouched because of a lack of manpower to work with the material.

2. Preserve Documents (1 position; \$24,000)

Valuable manuscripts and documents throughout the Institution are subject to irreparable damage and deterioration through aging and use. It is imperative that the Smithsonian begin a major effort to microfilm these materials. The Smithsonian Archives will select and designate documents in various units to be microfilmed and will provide central direction to ensure efficiency and maintenance of professional archival standards. This is an effort which must be strengthened if these records are not to be lost forever. They involve many thousands of notes, letters, and records of various notable men of science, art, and history.

In FY 1973, \$8,000 are requested for the salary of a technician working under supervision of an archivist to prepare an indexing and retrieval system for the microfilming effort. Other funds of \$16,000 are for microfilming costs related to the Archives' materials, and estimated at the National Archives and Records Service rate of 6¢ per exposure. As the capability of the Smithsonian's Photographic Services Division is established, this work will be done inhouse at no greater cost, but with much greater security and production control by the Photographic Services Division.

DOCUMENTATION AND CONSERVATION
SMITHSONIAN INSTITUTION LIBRARIES

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>59</u>	<u>8</u>	<u>67</u>
11 Pers Comp	\$658	\$68	\$726
12 Pers Benefits	56	5	61
21 Travel	8	0	8
22 Trans of Things			
23 Rent, Comm & Util ...	2	8	10
24 Printing	17	30	47
25 Other Services	39	19	58
26 Supplies & Materials ..	57	9	66
31 Equipment	36	108	144
41 Grants			
TOTAL	<u>\$873</u>	<u>\$247</u>	<u>\$1,120</u>

Analysis of Increase

Pay Increase	15
Program	232

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Extension of Basic Services (7 positions; \$190,000). In FY 1973, basic library services will have to be strengthened for the National Air and Space Museum. Services will have to be extended to the new Hirshhorn Museum. Three library clerks and \$22,000 are required for these purposes. Staff are also requested for the Smithsonian Astrophysical Observatory branch, and the central facility in the National Museum of Natural History. An additional position (clerk and \$8,000) will be utilized for the Astrophysical Observatory, and the balance of requested staff (three clerks and \$22,000), operating out of central facilities in the National Museum of Natural History, will provide partial services to the currently unmanned branch at the Radiation Biology Laboratory, and the departments of anthropology and entomology. The request will provide needed journal and book purchase funds (\$87,000) for these areas. Support costs in the form of necessary supplies, computer time, and cataloging equipment are also included (\$51,000).

Conservation and Preservation of Books and Records (1 position; \$42,000). The Libraries have identified 10,000 pieces of valuable library material (books, journals, and other records) which require immediate preservation and restoration treatment. In addition, the backlog of binding current serials approaches 40,000. The Libraries available resources devoted to these activities amounts to virtually nothing, since rising costs in book purchases over the years has eroded much of its capability. This problem needs to be corrected over the next few years, and the initial request for one position (\$6,000) and funds to cover improved restoration and preservation processes, contractual services, inhouse repairs, and the purchase of some basic equipment and supplies, is intended to do this in a phased fashion (\$36,000).

DOCUMENTATION AND CONSERVATION
SMITHSONIAN INSTITUTION LIBRARIES

1971 Actual	\$ 741,000
1972 Appropriation ...	\$ 859,000 ^{1/}
1973 Estimate	\$1,120,000

The Smithsonian Institution Libraries provide the documentary information base and the delivery services that are required by, and contribute directly to, the exhibit and research programs of the various bureaus of the Institution.

^{1/} FY 1972 appropriation adjusted by funds lapsing in 1972.

In FY 1973, a requested increase of \$232,000 (including 7 positions and \$58,000) is being sought to extend basic services, and strengthen the Institution capability in record preservation and conservation. An additional \$15,000 are requested for necessary pay.

Need for Increase

1. Extend Basic Services (7 positions; \$190,000)

Library staffing must be strengthened for the National Air and Space Museum, and will be required for the first time in FY 1973 for the new Hirshhorn Museum and Sculpture Garden. Three library clerks are sought for these operations. Three similar positions are also requested in the central library to serve on a shared basis in currently unmanned branches of the Radiation Biology Laboratory, and the anthropology and entomology departments of the National Museum of Natural History. Additional support (one clerk) is required for the present one-man library staff of the Smithsonian Astrophysical Observatory (this branch provides services to about 50 scientists). A total of seven positions (\$52,000) is requested for these activities.

Basic reference collections in space technology must be expanded for the National Air and Space Museum. Reference materials in specialized areas of art history must be assembled for the Hirshhorn Museum. In addition, there is an increased need to acquire materials on interdisciplinary research in ecology, environmental problems, and pre-revolutionary history. The Smithsonian Libraries over recent years have been faced with a vast world output of literature (about 350,000 titles per year) and rising prices (between four and 10 percent for journal publications). As a result, they are operating with only about one-third of the acquisition funds required by the curators. This shortage is widely felt throughout the Institution, and should be covered. An increase of \$87,000 for the purchase of books, journals, and documents is contained within this request, which will raise the amount available in the base to approximately \$160,000. As a target, the Libraries are building toward an annual book and journal purchase fund of about \$275,000.

The balance of this portion of the request (\$51,000) is for badly needed support funds to provide indexing and cataloging equipment, routine supplies, materials, computer time, and other costs.

2. Books and Record Preservation (1 position; \$42,000)

This request reflects the general Institutional interest in strengthening the restoration and preservation of valuable records and documents. The condition of many rare volumes in the Libraries is perilous. Books can withstand only so much Institutional use. Paper is an impermanent material, and the Libraries' preservation program has been almost completely eliminated by inflation in other program costs. About five years ago, approximately six man-years of effort and \$65,000 were being devoted to restoration. The current figures approximate two man-years and \$18,000. The capability must be restored. The Libraries have identified more than 10,000 works that require immediate special care, including many very rare books. In addition, the Libraries have backlogged the binding of 40,000 current serials due to the shortage of funds, and are adding to this backlog at the rate of about 10,000 volumes per year. An increase to begin to take care of the preservation deficiencies is needed. The request would provide one additional support position (\$6,000) and resources for costs related to restoration and preservation processes, contractual services, in-house repairs, needed equipment and supplies (\$36,000).

DOCUMENTATION AND CONSERVATION
OFFICE OF THE REGISTRAR

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>31</u>	<u>1</u>	<u>32</u>
11 Pers Comp	\$236	\$ 9	\$245
12 Pers Benefits	20	1	21
21 Travel			
22 Trans of Things	60		60
23 Rent, Comm & Util ...			
24 Printing			
25 Other Services	19	12	31
26 Supplies & Materials ..	1		1
31 Equipment	1		1
41 Grants			
TOTAL	<u>\$337</u>	<u>\$22</u>	<u>\$359</u>

Analysis of Increase

Pay Increase	4
Program	18

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973
Specification of Increase (Program):

Preserve Accession, Archival and Other Records (\$12,000). To strengthen the Institutional document preservation effort, \$12,000 for equipment and support funds are being sought to establish a deacidification capability to treat badly deteriorating records in various units. In the Registrar's Office alone, an estimated 18,000 important accessions papers (80,000 pages) require immediate attention. About 1,800,000 records are in the Registrar's files. Most of these need microfilming to protect against fire or other disaster. Their loss would seriously affect the research value of the collections. In FY 1972, some effort is being expended to microfilm a portion of the records. The Archives and Photographic Services Division are requesting increases to strengthen the Institutional effort.

Mail Services (1 position; \$6,000). A central mail service is maintained as part of the services provided to the museums and galleries. This facility is inadequately manned (10 clerks) to handle and distribute the two million pieces annually flowing to the Institution. One additional clerk (\$6,000) is sought to help remedy the current situation and to meet the added workload anticipated for the new Hirshhorn Museum and the recently opened Renwick Gallery.

DOCUMENTATION AND CONSERVATION
OFFICE OF THE REGISTRAR

1971 Actual \$303,000
1972 Appropriation ... \$332,000 1/
1973 Estimate \$359,000

The Office of the Registrar was established in 1881 to serve as a central point for officially accessioning and recording the specimens and objects coming into the Institution. It now has responsibility for recording and safeguarding the documents pertaining to the receipt and legal ownership of the items accessioned into the collections of the National Museum of Natural History and the National Museum of History and Technology. In addition, the Office provides essential support services to all units of the Smithsonian in their research, education, collection management, and exhibition programs, by operating the central mail room and the shipping office, handling U.S. Customs clearances, servicing public inquiries for the Museums, providing the central messenger service, and obtaining official foreign travel documents such as passports, visas, and work permits.

For FY 1973, an additional \$18,000 are requested, most of which is to meet the Registrar's contribution to strengthening the overall Institutional efforts in the area of record preservation and conservation. In addition, \$4,000 are sought for necessary pay.

Need for Increase

1. Preserve Accession Records (\$12,000)

A major Institutional deficiency exists in the unaccomplished restoration of deteriorated documents and records for effective permanent preservation. These are irreplaceable and valuable original records that provide a basic source of information for much of the National Collections, dating from the establishment of the Institution. Early papers are fragile and torn, the handwriting fading, and the creases breaking. An increase of \$12,000 for equipment and support funds is requested to permit the establishment of a de-acidification capability, and other minor treatment and restoration to be accomplished in conjunction with the expansion of Institutional preservation efforts.

In the Registrar's Office alone, an estimated 18,000 important accessions (80,000 pages) require immediate attention. In total, there are about 1,800,000 pieces, most of which need microfilming to protect against fire or other disaster. Their loss would seriously affect the research value of the collections. All of these represent working records for the Smithsonian staff and visiting scholars.

In FY 1972, some effort is being expended in conjunction with the Smithsonian Archives, to arrive at suitable procedures for selecting archival, registral, and other documents for preservation, restoration, microfilming, and retrieval. A system has been identified and funds for its initial implementation are requested in the Smithsonian Archives budget. In addition, a start was made in microfilming, through contractual services, a portion of the registral records by using funds appropriated in FY 1972. But a much greater Institutional level of effort is necessary.

2. Mail Service (1 position; \$6,000)

Mail is distributed via approximately 192 different stations in the various Smithsonian offices, on and off the Mall. Present staffing (10 clerks and 3 messengers) of the central facility is inadequate for the sorting and delivery of 2 million pieces of mail annually. An increase of \$6,000 is requested for one additional mail clerk to improve the current situation and to meet the added workload activities anticipated for the new Hirshhorn Museum and the recently opened Renwick Gallery.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

DOCUMENTATION AND CONSERVATION
PHOTOGRAPHIC SERVICES DIVISION

	<u>Base</u> <u>1973*</u>	<u>Increase</u> <u>Requested</u>	<u>1973</u> <u>Estimated</u>
No. of Perm Pos	<u>23</u>	<u>4</u>	<u>27</u>
11 Pers Comp	\$229	\$52	\$281
12 Pers Benefits	20	3	23
21 Travel			
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing		5	5
25 Other Services	13	33	46
26 Supplies & Materials ..	25	22	47
31 Equipment		63	63
41 Grants			
TOTAL	<u>\$287</u>	<u>\$178</u>	<u>\$465</u>

Analysis of Increase

Pay Increase	16
Program	162

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Document Preservation and Microfilming (1 position; \$49,000). As part of the high priority effort to rectify deficiencies in preservation and conservation of various records, the Photographic Services Division is urgently seeking to expand in FY 1973 its mechanical capability in microfilming. Prototype systems have been examined by the Office of the Registrar and the Smithsonian Archives for work to be done in selecting, preparing, and eventually retrieving information associated with registral, archival, and library materials. This request is for a technician (\$9,000), and equipment, supplies, and materials (\$40,000). Funds to implement the screening and indexing systems are contained in the Archives request for FY 1973.

Laboratory Equipment (\$57,000). There is a severe need to begin to replace outdated obsolescent equipment and procedures with modern color instruments and processing. No equipment purchases have been made for ten years, and much of the current process is tied to manual operating techniques. A request for purchase and installation of equipment (\$57,000) is included.

Print, Negative Collection, and Preservation (3 positions; \$56,000). The Laboratory's current operating capacity is about one third of that needed to file, treat, and systematize prints and negatives accumulating at a rate of about 30,000 annually in the central facilities. Valuable backlogged materials (numbering close to a million) are receiving no attention, and a large percentage must begin to receive treatment or they will soon deteriorate to the point where they cannot be recovered. Three technicians (\$30,000) and support funds (\$26,000) are required.

DOCUMENTATION AND CONSERVATION
PHOTOGRAPHIC SERVICES DIVISION

1971 Actual	\$255,000
1972 Appropriation ...	\$282,000 <u>1/</u>
1973 Estimate	\$465,000

The Smithsonian photographic services are unique in that the Institution's activities require more quality and custom care as compared to the photographic needs of most government agencies. The photographic work is constantly under

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

public and scholarly scrutiny. In view of the importance of photographic services to the entire Institution, the Photographic Services Division was formed to exercise a more stable and positive control over the application of procedures and techniques. It maintains laboratories in three museum buildings.

In FY 1973, a \$162,000 increase is being requested to establish a badly needed color capability by replacing hand operated and obsolescent equipment, to extend the effort at centralizing and making accessible the hundreds of thousands of negatives and prints accumulated by the Institution, and to strengthen considerably the overall Institutional program of preserving the records and documents presently in the Archives, Libraries, and Registrar's offices. In addition, \$16,000 are requested for necessary pay.

Need for Increase

1. Documentation, Preservation, and Microfilming (1 position; \$49,000)

As part of its contribution to the Institutional recording and preservation efforts of various units (such as the Registrar's Office, the Smithsonian Archives, and the Libraries), the Photographic Services Division is urgently seeking additional capability to carry through with the actual microfilming of various documents. Prototype systems have been examined by the Office of the Registrar and the Smithsonian Archives for work to be done in selecting, preparing, and eventually retrieving information associated with registral and archival records. These documents will begin to flow into the Division in great magnitude in FY 1973. About 10,000 microfilm exposures currently are made per year. If this figure were to immediately increase to 1,000,000 (which reflects the potential volume of existing records), it is estimated that the workload is such that about 4-6 years of effort would be required to eliminate the backlog of materials. To meet its portion of responsibility, the Photographic Services Division is seeking one technician (\$9,000) to serve in a microfilming capacity, and support funds (\$40,000) to provide basic equipment, supplies, and other materials.

2. Laboratory Equipment (\$57,000)

Much of the present equipment is out-dated and obsolescent. Manually operated techniques dominate the production process. No equipment purchases have been made for over ten years. Much of the work, especially color processing, must be given to commercial sources. This results in high production costs, loss of quality control, and mounting risks of losing valuable and original material. To make a start in rectifying the Laboratory's equipment needs, a request for \$57,000 to begin to establish color capability and to purchase and install modern photographic duplication and processing machines is included in the FY 1973 budget.

3. Print, Negative Collection, and Preservation (3 positions; \$56,000)

At the present, the Institution lacks even a simple filing and retrieval system for valuable negatives and prints. These number close to a million, some dating back to Mathew Brady's time. Twenty percent of these are in a very bad state of deterioration and must be centrally treated and restored within the next two years if they are not to be lost to posterity; another ten percent must be restored within four years. In the meantime, the Laboratory estimates that 30,000 negatives are accumulated each year, and its current capacity to centrally file, treat, and care for these is approximately 10,000 per year. To begin to extend the necessary efforts to correct this deficiency in the print and negative area, three technicians are requested (\$30,000) along with support funds (\$26,000) for indexing equipment, supplies and materials, and contractual services.

ADMINISTRATIVE AND CENTRAL SUPPORT

The activities presented in this section cover the central administrative and technical services which operate in support of the program units. Included are the Office of the Secretary, Office of the General Counsel, Office of the Treasurer, Office of Personnel Administration, Office of Exhibits, Office of Museum Programs, Smithsonian Press, Supply Division, Management Analysis Office, Travel Services Office, Duplicating Section, and the Information Systems Division.

In our society, a measure of how successful any organization or institution is in controlling its program direction is the degree to which it acquires new resources to develop its activities, delegates authority and decision-making in a manner which channels these resources into useful and productive areas, and holds central administrative growth and control at a minimum. This is not only true in those sectors of our society which provide economically measureable and consumable products but also those segments (such as museums and higher institutions of learning) which help to construct the moral and intellectual fabric of future generations, and provide the less measureable products which nourish the quality of the country's human spirit.

The historical funding patterns of FY's 1965-1971 reveal that the Institution in its program operations has substantially strengthened its history, art, and science functions. It has embarked on several new ventures in public service and education. It has acquired, exhibited, and protected new building space and thousands of new collection items. While pursuing these objectives, it has not allowed administrative costs to increase disproportionately to program growth. In the general public's interest, it is the Institutional management's desire to keep administrative costs at a minimum and to continue to provide as many resources to program operations as possible to insure the quality of the Institution's diverse products in exhibitions, education, research tours, and other public services. The activities contained in this section of the budget are specifically geared to carry this out. These are necessary costs which must be covered if the Institution is to continue to modernize its management apparatus consonant with the objective of keeping its overall administrative procedures, paper work, filing, and other labor-intensive tasks to a minimum.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF THE SECRETARY

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>40</u>	<u>7</u>	<u>47</u>
11 Pers Comp	\$551	\$106	\$657
12 Pers Benefits	47	9	56
21 Travel	24	3	27
22 Trans of Things			
23 Rent, Comm & Util ...	1	1	2
24 Printing		2	2
25 Other Services	7	25	32
26 Supplies & Materials ..	7	3	10
31 Equipment	3	8	11
41 Grants			
 TOTAL	 <u>\$640</u>	 <u>\$157</u>	 <u>\$797</u>

Analysis of Increase

Pay Increase	12
Program	145

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Assistant Secretary (1 position; \$42,000). An assistant secretary is requested to furnish senior level management expertise.

Expand the Audit Function (4 positions; \$45,000). The Office of Audits needs to add three additional auditors and one secretary to its present staff of four auditors and one secretary. This additional staff will assist in the audit function for the more than 40 operating units and several staff offices.

Curator for the Smithsonian Building (2 positions; \$20,000). To curate the collection of furniture currently in use in the Smithsonian Institution Building, to process and administer loan of paintings and other art, and to be responsible for the acquisition of additional authentic pieces.

Support for the American Association for the Advancement of Science (\$20,000). Funds are requested to support some of the expenses of this meeting.

General Programs Support (\$18,000). Funds are requested for general program support for the several components of the Office of the Secretary. These support needs include travel, office supplies and equipment, and use of consultants and contractual services to assist in program planning and analysis.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF THE SECRETARY

1971 Actual\$651,000
 1972 Appropriation.....\$629,000 1/
 1973 Estimate.....\$797,000

The Office of the Secretary is composed of the immediate Office of the Secretary, and the Offices of Under Secretary, Assistant Secretary (Science), Assistant Secretary (History and Art), Assistant Secretary (Public Service) and Audits.

In FY 1973 a program increase of \$145,000 is requested for an assistant secretary, for enlargement of the audit staff, for curator of the Smithsonian Institution Building, for support to the meeting in Washington of the American Association for the Advancement of Science, and for general program support. An amount of \$12,000 for necessary pay is also required.

Need for Increase

1. Assistant Secretary (1 position; \$42,000)

An assistant secretary is requested to furnish senior level management expertise. The Institution currently employs an Under Secretary with non-appropriated funds. Upon his retirement, it is desirable to fill this position on the federal rolls as the Assistant Secretary.

2. Expand the Audit Function (4 positions; \$45,000)

The Smithsonian Institution has grown in recent years especially in physical facilities. Old programs have been expanded and several new programs have been added. In FY 1970 there were federal appropriations in the amount of \$33,606,000 while in FY 1973 the Institution is anticipating over \$107,000,000 in funding. Additional appropriations have been made to Museum Programs and Related Research which is a Special Foreign Currency appropriation. This has expanded the Smithsonian's responsibilities overseas.

The audit function was begun in FY 1967. This was the first time the Smithsonian had its own internal audit staff. Currently the staff consists of four auditors and one secretary. With more than 40 operating units and several staff offices and a large backlog of important audit assignments, additional audits staff are essential. The Office of Audits needs to add three additional auditors and one secretary (\$41,000) and \$4,000 for travel and equipment.

3. Curator for Smithsonian Institution Building (2 positions; \$20,000)

The Smithsonian Institution Building underwent major renovation with funds made available from the Congress. Many of the offices and galleries in this building have been restored as nearly as possible with furnishings and architectural details of the 19th century. The historical value of this building is reflected in the fact that the finance ministers from the big ten countries met in this building in December 1971. To curate the collection of furniture currently in use, to process and administer loans of paintings and other art, and to be responsible for the acquisition of additional authentic pieces, a curator and a clerk are needed for the Smithsonian Building (\$20,000).

4. Support for the American Association for the Advancement of Science meeting (\$20,000)

The American Association for the Advancement of Science (AAAS) is holding its 142nd meeting in Washington, D.C. in December 1972. The Secretary of the Smithsonian Institution will serve as the chairman of this meeting and the Smithsonian buildings and exhibits will be a focus of attention of the more than 8,000 meeting participants. The AAAS and the Institution have a long history of working together. Joseph Henry, the first Secretary of the Institution, was the second President of the AAAS.

One feature of this meeting will be a discussion of the contributions of museums of scientific inquiry and related uses of museums and extension education devices. Funds are requested to support some of the expenses of this meeting. These funds are in addition to funds being raised from local merchants, the AAAS, and the private sector of the Smithsonian.

5. General Program Support (\$18,000)

An amount of \$18,000 is requested to provide overall support to the several components of the office. These support needs include travel to Smithsonian bureaus and activities not in the immediate Washington area for program management and review, office supplies and equipment, and use of consultants and contractual services to assist with the program planning, analysis, and administration of a growing body of special programs involving several museums, galleries, or research laboratories such as the Bicentennial, Environmental Sciences, and Special Foreign Currency programs.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIESOFFICE OF THE GENERAL COUNSEL

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>9</u>	<u>1</u>	<u>10</u>
11 Pers Comp	\$143	\$12	\$155
12 Pers Benefits	11	1	12
21 Travel	4	1	5
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing			
25 Other Services	1	3	4
26 Supplies & Materials ..	2		2
31 Equipment	2	2	4
41 Grants			
TOTAL	<u>\$163</u>	<u>\$19</u>	<u>\$182</u>

Analysis of Increase

Pay Increase	3
Program	16

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Legal Counsel Requirements of the Institution (1 position; \$16,000). The Office of the General Counsel handles the legal matters of the 40 different line programs and 10 staff offices of the Institution, and at the same time advises the Secretary and Board of Regents on the administration of the Institution as a whole. A secretary and funds for travel, other services, and equipment are requested.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIESOFFICE OF THE GENERAL COUNSEL

1971 Actual	\$151,000	
1972 Appropriation.....	\$159,000	1/
1973 Estimate.....	\$182,000	

The Office of the General Counsel handles the legal matters of the 40 different line programs and 10 staff offices of the Institution, and at the same time, advises the Secretary and Board of Regents on the administration of the Institution as a whole. In addition, the staff must monitor Congressional activities, judicial opinions and decisions, and Executive Branch directives and regulations to determine their applicability to and impact on the Institution's activities, and so advise the appropriate SI officials.

An increase of \$16,000 is requested for staff and other support. Funding of \$3,000 is requested for necessary pay.

Need for Increase

As a non-Governmental establishment which nevertheless operates in substantial part with appropriated funds, the legal problems of the Institution include those arising from the operations of a private, university-like, charitable corporation, as well as those common to Government organizations. Many other-wise routine matters are complicated by the pervasive necessity to maintain a rational, effective, and legal relationship between these two capacities in which the Institution functions. In addition, the OGC is responsible for the continuous analysis of Congressional activities and legislation and their impact on the Institution, and has a major role in the furtherance of the Smithsonian's own legislative program.

The Office of the General Counsel proposes to add one secretary to the staff in FY 1973 to assist in handling the increased workload of this office which has resulted from the expanded programs and interests of the Institution. At present the professional staff consists of four full-time attorneys and a Special Assistant to the Secretary, with a support staff of one administrative assistant and three secretaries. The addition of one secretary will correct the present imbalance between the professional and support staff. An amount of \$10,000 is requested to fund this additional position.

An increase of \$6,000 is sought for support costs as follows:

1. Equipment and library material

The staff has deferred the purchase of office equipment and the acquisition of legal reference material, which deferral has not allowed the best utilization of professional and support staff man-hours. With the increased workload of the staff, it is essential at this time that these purchases be made.

2. Travel

Frequent travel to the many Smithsonian operations outside the District of Columbia is necessary by the staff in the handling of legal matters ranging from compliance with local ordinances to negotiations for cooperative agreements with foreign institutions.

3. Information

The attendance at legal seminars and conferences is required for the continuing legal education of the attorneys to insure that their opinions are based on current directions, interpretations, and applications of the law. Additionally, there has been a periodic need to secure independent professional advice on specialized and technical matters.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF THE TREASURER

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	33	2	35
11 Pers Comp	\$368	\$21	\$389
12 Pers Benefits	30	2	32
21 Travel	2		2
22 Trans of Things			
23 Rent, Comm & Util ...	200	20	220
24 Printing			
25 Other Services	43	35	78
26 Supplies & Materials ..	7		7
31 Equipment	5		5
41 Grants			
TOTAL	<u>\$655</u>	<u>\$78</u>	<u>\$733</u>

Analysis of Increase

Pay Increase	8
Program	70

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Postage Indicia, Workmen's Compensation, and Accounting Requirements (2 positions; \$70,000). Postage indicia requirements are provided centrally within the Treasurer's Office budget. An amount of about \$200,000 will be spent in FY 1972. Increased use and higher rates will create the need for an additional \$20,000 in FY 1973.

About \$35,000 is now available to meet Workmen's Compensation costs. A recent bill from the Department of Labor (for FY 1971 costs but to be paid in FY 1973) is for \$73,000. An increase of \$35,000 is sought for this purpose.

Finally, two additional positions (\$15,000) are requested for the Accounting Division: a reception and information clerk (with typing duties) to serve the Accounting and Supply Division in new jointly-occupied space (for improved productivity) and an additional accounts maintenance clerk to handle a voucher workload growing from \$59 million in FY 1972 (in about eight accounts) to about \$67 million next year.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF THE TREASURER

1971 Actual	\$575,000
1972 Appropriation ...	\$647,000 <u>1/</u>
1973 Estimate	\$733,000

This office provides financial management assistance and technical services to the Smithsonian. It is composed of the Treasurer's immediate Office, the Office of Programming and Budget, and the Accounting Division. Financial planning, budgeting, accounting, contracts administration, and reporting are the responsibilities of these several units.

An increase of \$70,000 is requested to finance higher postal costs, the cost of workmen's compensation, and to provide for two additional staff in the Accounting Division. An amount of \$8,000 is needed for necessary pay.

Need for Increase

1. Postage Indicia (\$20,000)

Funding of the Institution's postage indicia requirements are provided centrally from the Office of the Treasurer. An additional \$20,000 are required to meet the additional cost of postage. In FY 1971 postage was \$155,000. Increased use and higher rates have resulted in this cost being \$200,000 in FY 1972. In FY 1973 the cost is expected to be \$220,000.

2. Workmen's Compensation (\$35,000)

The Department of Labor has billed the Smithsonian Institution \$72,801 for compensation that was paid to employees in FY 1971. This bill has to be paid to the Department of Labor in FY 1973 and is \$35,000 more than is currently being paid.

3. Accounting (2 positions; \$15,000)

The Accounting Division, the Information Systems, and the Supply Division are being relocated to rented quarters. It is hoped this move will give them adequate office space and by having the three offices located together will improve operations in each. The move will require the addition of one staff member to act as receptionist and clerk typist (\$6,000).

The Accounting Division also needs to add one accounts maintenance clerk. This unit processes the vouchers for all the Smithsonian's federal accounts: "Salaries and Expenses," "Science Information Exchange," "Woodrow Wilson International Center for Scholars," "Museum Programs and Related Research (Special Foreign Currency)", "Construction" and "Trust Funds." In FY 1972 four accounts maintenance clerks are processing expenditures totalling over \$59,000,000 and in FY 1973 expenditures are expected to be over \$67,000,000. One additional employee is required to assist in this additional workload, (\$9,000).

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF PERSONNEL ADMINISTRATION

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>32</u>	<u>3</u>	<u>35</u>
11 Pers Comp	\$391	\$41	\$432
12 Pers Benefits	33	3	36
21 Travel	1		1
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing	2		2
25 Other Services	27	1	28
26 Supplies & Materials ..	5	1	6
31 Equipment	1	2	3
41 Grants			
TOTAL	<u>\$460</u>	<u>\$48</u>	<u>\$508</u>

Analysis of Increase

Pay Increase	8
Program	40

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Services to Employees and Labor-Management Operations (3 positions; \$40,000). Three additional positions (a personnel consultant, a trainee, and a clerk typist) at a cost of \$36,000 and \$4,000 additional for equipment, computer time, training, and supplies are requested to improve operations in two key areas. First, there is a growing workload requirement resulting from the negotiation, implementation, and administration of union contracts. In FY 1972 four such contracts were negotiated and additional ones are anticipated in the budget year. Second, it is important to develop and enhance the operations of a training laboratory to provide basic skills training to lower graded employees to assist them in job advancement. Some 150 employees have expressed interest in such training.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF PERSONNEL ADMINISTRATION

1971 Actual	\$396,000
1972 Appropriation ...	\$452,000 1/
1973 Estimate.....	\$508,000

The Office of Personnel Administration has responsibility for personnel administration and the operation of health services. It helps to formulate policy over a wide range of activities from manpower planning and managerial development, through employee training, performance evaluation, and labor relations. These programs generally fall into six broad categories: manpower and organization, career development, management and personnel consulting, technical and administrative support, health services, recruitment and placement and administration and direction.

The request program increase of \$40,000 will be used to improve services to employees and potential employees, and to strengthen its operations in the area of labor-management operations. An amount of \$8,000 for necessary pay is also required.

Need for Increase

The responsibility of the Office of Personnel Administration includes 20 significant programs and 16 of these programs have suffered directly or indirectly because of acute staffing shortages. The ratio of staffing for carrying out personnel office functions is one personnel employee per 125 employees serviced. While no fixed standard has been developed, this is considerably higher than comparable government agencies which average approximately one personnel employee per 80 employees serviced.

Annual reports indicate that over the last few years, the number of actions handled on a yearly basis by the staff has grown to 80,000. This is a sizable workload. In FY 1972, four union contracts were negotiated. One election was held to determine exclusive recognition and a new unit resulted. Additionally, there will be a minimum of two new contracts negotiated in FY 1973. This will require extensive staff efforts and assistance in the administration of these contracts. A portion of this increase would be used to support and enhance the operations of a training laboratory which provides basic skills training to lower graded employees to assist them in developing talents toward upward mobility. There is an identified need for providing this training; of approximately 300 employees, 153 have already applied.

In FY 1973, for the first time, the Office should make key strides forward in such programs as Personnel Management Effectiveness Evaluation, Position Management, Labor-Relations Planning, Upward Mobility, Communications Program Planning, and Development. The increased staffing will provide for more training, better program planning, a formal feedback program, more responsive assistance in hiring, and smooth implementation of the Federal Personnel Management Information System as required by the U.S. Civil Service Commission.

The requested three positions include a personnel consultant, a trainee, and a clerk typist (\$36,000). An amount of \$4,000 will provide for equipment, computer time, training, and supplies.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
SMITHSONIAN INSTITUTION PRESS

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	25	1	26
11 Pers Comp	\$340	\$31	\$371
12 Pers Benefits	29	2	31
21 Travel	3		3
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing	364	27	391
25 Other Services	5		5
26 Supplies & Materials ..	2		2
31 Equipment	2		2
41 Grants			
TOTAL	\$745	\$60	\$805

Analysis of Increase

Pay Increase	15
Program	45

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase Program):

Design and Printing of Publications (1 position; \$45,000). Careful design of publications is essential to assure that the information they contain is clearly and accurately transmitted to the reader. Good design also helps secure the most economic production within the specifications set by the Joint Committee on Printing. Funds are requested to employ a specialist in the design of printed materials (\$18,000). Approximately \$350,000 are now available for printing research manuscripts, catalogs, and other publications. An additional \$27,000 are sought to print backlogged and new materials.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIESSMITHSONIAN INSTITUTION PRESS

1971 Actual	\$691,000
1972 Appropriation	\$738,000 <u>1/</u>
1973 Estimate	\$805,000

For a century and a quarter, the Institution has achieved the diffusion of research knowledge principally through the Smithsonian Press. Most of the Press publication activity is considered as a fundamental extension of the basic research programs of the Smithsonian's museums and research laboratories. The Smithsonian Press also produces and distributes exhibit catalogs and information leaflets. This is an extension of another basic Smithsonian program, public education. Finally, the Press also furnishes the Institution with a variety of internal manuals, reports, specimen labels, and directories.

For FY 1973 an increase of \$45,000 is requested for the design of catalogs, guides, and leaflets and for the printing of additional research and exhibition publications. An additional \$15,000 is sought for necessary pay for staff.

Need for IncreaseDesign and Printing of Publications (1 position; \$45,000)

Increased exhibition and education activities of the National Portrait Gallery and the National Collection of Fine Arts, and the addition of the Renwick and Cooper-Hewitt Museums, have outstripped the Press's ability with present staff to design the necessary exhibition catalogs, hall guides, and public education leaflets. Careful design of these printed materials is essential, not simply for maximum transfer of information, but to secure the most economic production within the specifications set by the Joint Committee on Printing. Funds are requested to correct this problem by the addition of a specialist in the design of printed materials (\$18,000).

The Press spends about two-thirds of its efforts on publishing the results of studies performed in various Institutional laboratories and museums, and one-third on printing leaflets, pamphlets, and catalogs for use by the public. A backlog of research manuscripts or monographic publications went unpublished for lack of funds for printing. In addition, there are growing needs for the printing of catalogs describing and documenting new exhibits in the museums and art galleries. These catalogs perform a dual role. They add to the education and pleasure of visitors who have the opportunity to see the exhibits and they are available for permanent reference and research by students and scholars who cannot see the exhibition in person. Approximately \$350,000 are now available for printing research manuscripts, catalogs, and other publications. An additional \$27,000 is sought to print backlogged and new materials.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
INFORMATION SYSTEMS DIVISION

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>14</u>	<u>3</u>	<u>17</u>
11 Pers Comp	\$214	\$49	\$263
12 Pers Benefits	18	4	22
21 Travel	3	0	3
22 Trans of Things			
23 Rent, Comm & Util	9	3	12
24 Printing			
25 Other Services	11	6	17
26 Supplies & Materials	3	4	7
31 Equipment	2	0	2
41 Grants			
TOTAL	<u>\$260</u>	<u>\$66</u>	<u>\$326</u>

Analysis of Increase

Pay Increase	8
Program	58

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Storage and Retrieval of Collection and Research Data (3 positions; \$58,000).
 In FY 1973, the Division will begin to help the National Museum of History and Technology develop a system for the indexing and retrieval of information concerning eighteenth century instruments for scientific measurement as a step in developing a museum-wide catalog of objects. Additional work will be necessary for the Hirshhorn Museum's system for data retrieval on the sculpture collection. Much greater assistance will have to be provided to the National Collection of Fine Arts in its efforts to construct the Bicentennial Inventory of American Paintings.

Extended efforts in computerizing information on the natural history collections will require greater Division resources. The Museum will be extending its processing efforts in the anthropology, entomology, invertebrate zoology, and mineral science collections, and the Information System Division will require additional support to keep abreast of the workload.

Computerized support will have to be given to the Archives, the Registrar, and the Photographic Services Division as they begin a major push to improve the Institution's records preservation and documentation processes.

To provide services to these areas, a mathematician, computer specialist, and operations control clerk are required (\$45,000), along with support funds for equipment, supplies, and materials (\$13,000).

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
INFORMATION SYSTEMS DIVISION

1971 Actual	\$235,000
1972 Appropriation.....	\$255,000 <u>1/</u>
1973 Estimate.....	\$326,000

The Information Systems Division was established in 1966 so that the Institution could take advantage of computer technology in its management areas and cope with the masses of research data and information associated with its collections. Computer specialists, mathematicians, and support personnel are now working with curators, historians, scientists, and management personnel in developing and maintaining computer systems essential to Institutional objectives. The Division is comprised of an information retrieval and indexing section, a mathematical computation section, a software systems and maintenance section, a management information systems section, and an operations/key punch section.

A program increase of \$58,000 is requested to strengthen mathematical analysis and computer processing functions. In addition, \$8,000 are required for necessary pay for current staff.

Need for Increase

Staffing and related support costs since 1966 have been very moderate considering the Division's responsibility for developing, maintaining, and coordinating the use of automatic data processing services and equipment for the Institution. In recent years, a better understanding of the computer's potential in relation to the programs of the museums and galleries has evolved and progress has been achieved in many research areas. Presently computer systems pertaining to the National Collections and scientific computations are being developed in such a way that they can be utilized in several areas with only minor modifications. Much of the requested increase will be devoted to extending this effort.

Initially the Division's work concentrated largely on management support functions; i.e., the development of improved payroll, personnel, supply, and accounting systems. In FY 1971 and FY 1972, however, approximately 70 percent of the Division's resources have been in support of research and collection management. A portion of effort will necessarily remain in the administrative area, but the main emphasis must now be on systems support and information retrieval in the science, history, and art activities.

The FY 1972 level of funding provides for a staff of 14, including key punch personnel, some of whom must work out the systems design and programming for as many as ten projects in the various bureaus. The Division, at this level of staffing, cannot offer much more to potential new customers with valid problems than a demonstration of computer capabilities. Detailed systems analysis and programming for many potential computer applications must wait for increases in professional and technician staff. A recent study in the Smithsonian identified nearly fifty massive data-handling projects, only a few of which can be automated at this time. Additional staff is needed to automate those projects and to extend the major systems and programs developed for work with the National Collections.

1/ FY 1972 appropriations adjusted by funds lapsing in 1972.

In the art and history areas, in FY 1973 the Division will begin to develop a system for the indexing and retrieval of information concerning 18th Century scientific instruments to help the National Museum of History and Technology build a museum-wide catalog of objects. In addition, a documentation system for the Hirshhorn Museum collections will be developed further. A system for indexing and retrieval of data concerning the world-renowned sculptures which span antiquity to the present, as well as the extensive collection of modern art, will provide a research tool for museum officials, scholars, students, and publishers. In FY 1973, there is the need for additional systems development of the National Collection of Fine Arts Bicentennial Inventory of American Paintings. This will create an automated file which will contain descriptive subject material relating to each painting reported into the inventory. The file will assist the curator in charge of this project with record management tasks of indexing and cataloging and will also provide other finding aids to be used for planning exhibitions and assisting art/history scholars with research tasks.

In science, the National Museum of Natural History automated retrieval and indexing system will be developed for the areas of anthropology, entomology, invertebrate zoology, and mineral sciences. Increased accuracy and efficiency in the production of catalogs, labels, and other documents is anticipated. Cross reference listings that better index the collections will result in increased availability of information.

To supplement the Smithsonian's efforts at strengthening its records preservation, restoration, and retrieval processes in the registral, archival, and photographic areas, the Division will begin to work closely with the managers of this program to develop a dynamic query - response computer system that will provide selective access to information regarding the hundreds of thousands of items in the Institution's photographic collections. The pilot system will include the subjects of highest public interest such as stamps, coins, aircraft, and locomotives. In addition, the Division will begin to experiment with computer retrieval systems for microfilm information as an alternative to the standard manual methods. These experiments will include the evaluation and testing of equipment and display formats together with methods for viewing, reproducing, and retrieving microfilm data. Potential improvements and savings through the use of automated microfilm retrieval systems can be applied to many areas of the Institution.

To support these areas of effort, the requirements are a mathematician, a computer specialist, and an operations control clerk (\$45,000) with support funds (\$13,000).

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF SMITHSONIAN AND NATIONAL MUSEUM PROGRAMS

	<u>Base 1973*</u>	<u>Increase Requested</u>	<u>1973 Estimated</u>
No. of Perm Pos	<u>9</u>	<u>0</u>	<u>9</u>
11 Pers Comp	\$ 99	\$ 3	\$102
12 Pers Benefits	8		8
21 Travel	8		8
22 Trans of Things			
23 Rent, Comm & Util ...	1		1
24 Printing			
25 Other Services	180		180
26 Supplies & Materials ..	1		1
31 Equipment	15		15
41 Grants	<u> </u>	<u> </u>	<u> </u>
TOTAL	<u>\$ 312</u>	<u>\$ 3</u>	<u>\$315</u>

Analysis of Increase

Pay Increase	3
Program	

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

No program fund increase is requested for FY 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF SMITHSONIAN AND NATIONAL MUSEUM PROGRAMS

1971 Actual	\$200,000
1972 Appropriation ...	\$310,000 <u>1/</u>
1973 Estimate	\$315,000

The Office of Smithsonian and National Museum Programs provides program planning and review of the Smithsonian Institution's museum and exhibition activities with special emphasis on developing experimental and educational exhibits, surveying visitor reaction to the Institution's services, and providing advice and technical assistance to other museums. It works cooperative with museum professionals and their associations and organizations to increase the effectiveness of museums in the performance of their scholarly and public education functions. The Office of the Registrar, the Conservation Analytical Laboratory, and the Office of Exhibits are under the general administration of this Office.

No program fund increase is sought for FY 1973 for the operations of this Office. An amount of \$3,000 is requested for necessary pay purposes.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF EXHIBITS

No. of Perm Pos	Base 1973*	Increase Requested	1973 Estimated
	<u>159</u>	<u>0</u>	<u>159</u>
11 Pers Comp	\$ 1905	\$ 43	\$ 1948
12 Pers Benefits	161	3	164
21 Travel	10		10
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing	64		64
25 Other Services	130		130
26 Supplies & Materials ..	160		160
31 Equipment	50		50
41 Grants			
	<u> </u>	<u> </u>	<u> </u>
TOTAL	\$ 2480	\$ 46	\$ 2526

Analysis of Increase

Pay Increase	46
Program	

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Maintenance of Current Exhibits Program. No program increase is sought for FY 1973 for the Office of Exhibits as such. Its base resources are largely absorbed by the maintenance and upgrading of existing exhibits, the design of new permanent exhibits, and a program of changing special exhibits. A request for new nonrecurring funds for the construction and installation of major permanent exhibitions is in the special programs section of the budget request.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF EXHIBITS

1971 Actual	\$2,412,000
1972 Appropriation.....	\$2,439,000 <u>1/</u>
1973 Estimate.....	\$2,526,000

The Office of Exhibits is a key unit in the process of communicating concepts, ideas and information that reside in the vast National Collections. It works in close collaboration with the scientists, curators and historians in developing, designing and producing exhibits for the millions of people a year who visit the Smithsonian museums. Last year well over 200 projects were completed. Since its inception in 1955, the Office has produced over 3,700 permanent exhibit units primarily in the National Museum of History and Technology and the National Museum of Natural History, and has produced hundreds of special exhibits in art, history, and science. The Office is visited by hundreds of museum professionals who come to study methods and procedures and to be trained in the many sophisticated exhibits techniques, some of which were initiated and developed by the Exhibits Office. Among these unique techniques are freezedry taxidermy, plastic reproductions and modelmaking executed to a high degree of excellence.

The Office of Exhibits has an audio-visual and film unit producing material to augment and supplement the exhibits adding new depth and understanding and realism to what the visitor experiences. New approaches and techniques are being constantly studied, developed and incorporated into the exhibits to increase their value and receptiveness to the museum visitor. Selected exhibits are being surveyed and studied in collaboration with our visitors to determine their effectiveness and to learn more about the process of communicating ideas.

No program fund increase is being sought for FY 1973 for the Office of Exhibits. The base appropriation is largely absorbed by maintenance and upgrading of existing exhibits, design of new exhibits, and a modest program of changing special exhibits. New permanent exhibits, space for which exists in present Smithsonian museums, are being requested in the special programs section of this budget request. An increase of \$46,000 is requested for necessary pay for the Office of Exhibits staff.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
SUPPLY DIVISION

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	<u>21</u>	<u>0</u>	<u>21</u>
11 Pers Comp	\$ 242	\$ 5	\$ 247
12 Pers Benefits	20	1	21
21 Travel.....			
22 Trans of Things.....			
23 Rent, Comm & Util ...	8	1	9
24 Printing			
25 Other Services.....	6	2	8
26 Supplies & Materials..	86	16	102
31 Equipment	2	1	3
41 Grants.....			
 TOTAL	 <u>\$ 364</u>	 <u>\$ 26</u>	 <u>\$ 390</u>

Analysis of Increase

Pay Increase.....	6
Program.....	20

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Stockroom Operations (\$20,000). The growth in research, exhibit, and educational programs has increased demands for stockroom supplies. These commonly used items are centrally bought, stocked, and issued for economy and efficiency. Reserves of many needed items have been depleted, however, and prices continue to rise. An additional \$20,000 are required for stockroom supplies, equipment, and office machine repair services.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIESSUPPLY DIVISION

1971 Actual	\$330,000
1972 Appropriation	\$359,000 <u>1/</u>
1973 Estimate	\$390,000

The Supply Division procures supplies, materials, contractual services, and equipment for research, curatorial, exhibition preparation, and other Smithsonian activities. It stocks and issues office, laboratory, and other supplies required in daily management operations. It operates a property management program, obtaining excess property in lieu of new procurement wherever possible. The Division maintains property records and takes periodic inventories to insure adequate control and utilization of equipment items.

An increase of \$20,000 is required to maintain operations at adequate levels to provide services Institution-wide. In addition, \$6,000 are requested for necessary pay.

Need for Increase

The growth in research, exhibit, and educational programs has increased demands for stockroom supplies. In FY 1973 services will have to be extended to meet the additional requirements of the recently opened Renwick Gallery, and the new Hirshhorn Museum. For economy and efficiency of purchasing, general supply items are bought centrally and stocked by the Division for issue. The Division has had to reduce its expenditures for supplies in order to absorb part of higher pay costs. About \$102,000 are available in FY 1972 for other than personnel costs, and are used to purchase general office supplies and services. Because of limited support funds, the Division has been unable to conduct an orderly planned procurement and stocking program. It has been forced to buy often in small lots, resulting in less economical procurement. To save funds, the inventory has been purged of slow-moving items and items used by only one or a few units. The reserves of many items have been reduced to dangerous levels. Stock prices have been rising. An addition of \$20,000 is requested for stockroom supplies, equipment, and office machine repair services.

The Division's workload of purchase orders, contracts, imprest fund uses and other transactions associated with operating funds, foreign currency matters, and construction projects continues to increase. This increase is the result of general expansion including the assignment of procurements for the National Zoological Park (which heretofore have been processed by NZP personnel). Through continuing improvement in methods and techniques, productivity will continue to increase and as a result it is anticipated that the procurement workload will not outpace available manpower in Fiscal Year 1973. There is also the problem of adequate control of receiving and prompt delivery services to additional building facilities (for instance, the Renwick Gallery and the Hirshhorn Museum). To provide for the aforementioned expansion and increased responsibility, it is planned to make temporary reassignments within the Division as required to meet the most urgent needs.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
MANAGEMENT ANALYSIS OFFICE

	Base <u>1973*</u>	Increase <u>Requested</u>	1973 <u>Estimated</u>
No. of Perm Pos	<u>10</u>	<u>0</u>	<u>10</u>
11 Pers Comp	\$153	\$4	\$157
12 Pers Benefits	13		13
21 Travel			
22 Trans of Things			
23 Rent, Comm & Util ...			
24 Printing	8		8
25 Other Services			
26 Supplies & Materials ..			
31 Equipment			
41 Grants			
 TOTAL	 <u>\$174</u>	 <u>\$4</u>	 <u>\$178</u>

Analysis of Increase

Pay Increase	4
Program	

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

No program increase is being sought for FY 1973.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
MANAGEMENT ANALYSIS OFFICE

1971 Actual	\$148,000
1972 Appropriation	\$171,000 <u>1/</u>
1973 Estimate	\$178,000

The Management Analysis Office, under the direction of the Director of Support Activities, provides management analysis and is responsible for developing, coordinating, and maintaining a program to assist in the continuing development of sound business administration and management improvement programs within the Smithsonian Institution.

This unit, formerly called the Administrative Systems Division, assists members of the Executive Committee and other managers in the development and evaluation of more efficient and economical ways to carry out their missions. The unit provides management advisory services, makes studies and special surveys, develops organizational, functional, staffing and flow charts, procedural manuals, and maintains administrative issuances and forms management programs.

No increases are being requested for this activity except necessary pay (\$4,000).

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
DUPLICATING SECTION

	Base <u>1973*</u>	Increase <u>Requested</u>	1973 <u>Estimated</u>
No. of Perm Pos	<u>7</u>	<u>1</u>	<u>8</u>
11 Pers Comp	\$ 67	\$ 19	\$ 86
12 Pers Benefits	6	2	8
21 Travel			
22 Trans of Things			
23 Rent, Comm & Util ...	8		8
24 Printing			
25 Other Services	4		4
26 Supplies & Materials ..	4	9	13
31 Equipment			
41 Grants			
TOTAL	<u>\$ 89</u>	<u>\$ 30</u>	<u>\$119</u>

Analysis of Increase

Pay Increase	14
Program	16

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

Institutional Duplicating Services (1 position; \$16,000). The current workload requires a great deal of overtime work, and there is a deficiency of funds for supplies and materials. One additional multilith operator (\$7,000) and support funds are requested (\$9,000).

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
DUPLICATING SECTION

1971 Actual	\$100,000
1972 Appropriation	\$ 87,000 <u>1/</u>
1973 Estimate	\$119,000

The Duplicating Section is responsible for producing a wide variety of printed materials for the Smithsonian Institution. Included are administrative issuances, news releases and reports, and informational materials produced by the research, curatorial, and exhibits activities.

A program increase of \$16,000 is requested. One additional multilith operator (\$7,000) is requested, along with \$9,000 for supplies and materials. In addition, \$14,000 are requested for necessary pay.

Need for Increase

The current workload requires a great deal of overtime work. It is hoped that with an additional operator much of this will be eliminated. There is a current deficiency of funds for supplies and materials and it is essential that support capability be increased.

The service furnished by this unit is important to the overall program functioning of the Smithsonian Institution. The personnel are well qualified and do an excellent job. But staffing and funding must increase to keep abreast of growing Institutional requirements.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OTHER CENTRAL SUPPORT

	Base 1973*	Increase Requested	1973 Estimated
No. of Perm Pos	13	0	13
11 Pers Comp	\$162	\$4	\$166
12 Pers Benefits	14		14
21 Travel			
22 Trans of Things			
23 Rent, Comm & Util ...	4		4
24 Printing	3		3
25 Other Services	3		3
26 Supplies & Materials ..	1		1
31 Equipment	1		1
41 Grants			
TOTAL	<u>\$188</u>	<u>\$4</u>	<u>\$192</u>

Analysis of Increase

Pay Increase	4
Program	

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase (Program):

No program increase is being sought for FY 1973.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OTHER CENTRAL SUPPORT

1971 Actual	\$184,000
1972 Appropriation	\$185,000 <u>1/</u>
1973 Estimate	\$192,000

Included are the activities of the Equal Employment Opportunity Office, the special project writing and research efforts associated with producing the Joseph Henry Papers, the Travel Services Office, and the record keeping duties of the Secretary's Files. No increases are being sought for these activities other than necessary pay (\$4,000).

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

BUILDINGS MANAGEMENT DEPARTMENT

	<u>Base</u> <u>1973*</u>	<u>Increase</u> <u>Requested</u>	<u>1973</u> <u>Estimated</u>
No. of Perm Pos	<u>793</u>	<u>84</u>	<u>877</u>
11 Pers Comp.....	\$ 6, 773	\$ 735	\$ 7, 508
12 Pers Benefits.....	575	63	638
21 Travel.....	3		3
22 Trans of Things.....			
23 Rent, Comm & Util...	1, 730	567	2, 297
24 Printing.....	6		6
25 Other Services.....	1, 044	78	1, 122
26 Supplies & Materials..	335	48	383
31 Equipment.....	80	50	130
41 Grants.....			
TOTAL	<u>\$10, 546</u>	<u>\$1, 541</u>	<u>\$12, 087</u>

Analysis of Increase

Pay Increase.....	386
Program.....	1, 155

*FY 1972 approp. adjusted by funds withheld in 1972 & restored to base for FY 1973

Specification of Increase(Program):

Hirshhorn Museum and Sculpture Garden (44 positions; \$410,000). Start-up Buildings Management services will be required in the latter part of FY 1973. An amount of \$118,000 is needed for a nucleus staff of 42 positions (14 man-years)--22 guards, 10 mechanics, and 12 custodians. Support requirements include utilities and communications (\$127,000), installation of fire detection and other systems and miscellaneous contract services (\$75,000), custodial supplies(\$40,000), and equipment (\$50,000).

Cooper-Hewitt Museum (9 positions; \$85,000). Services will be extended to this new national museum of design. Initial staffing is two guards, two custodians, and five mechanics (\$83,000) and funds for supplies and materials (\$2,000). Utilities and Communications (\$250,000). Steadily rising rates and consumption of electricity, steam, telephone service, and other utilities cause a requirement for an additional \$250,000. About \$1,600,000 will be spent in FY 1972 and \$1,850,000 in the budget year.

Protection and Surveillance (21 positions; \$162,000). The present protection staff of 328 guards and supervisors cannot adequately protect over 3.6 million square feet of building space and additional grounds areas. The rising number of serious incidents and crimes (from 74 in FY 1970 and 129 in FY 1971 to 83 in the first half of FY 1972) plus additional new and planned exhibits require an additional 21 guards (\$155,000) and funds for their supplies and equipment (\$7,000).

Custodial and Building Services (10 positions; \$58,000). The application of cleaning standards has verified a severe shortage of custodial employees in the face of some 14 million visitors in 1971 and other growing workloads. There are now 266 buildings services employees including janitors, vehicle operators, and others. An additional 10 custodians are requested (\$56,000) with funds for uniforms, supplies, and materials (\$2,000).

Space Rental(\$190,000). New space is unavailable on the Mall to house authorized programs and their necessary support services. An estimated 28,000 square feet is needed. Such space is currently available in a convenient location. The amount of \$190,000 includes rent, relocation expenses, and minor tenant changes.

BUILDINGS MANAGEMENT DEPARTMENT

1971 Actual	\$ 9,371,000	
1972 Appropriation	\$10,402,000	<u>1/</u>
1973 Estimate	\$12,087,000	

The Buildings Management Department provides essential services to the program units and helps them accomplish the Institution's goals. These responsibilities include the protection, operation, and maintenance of eight major buildings. These include the original Smithsonian Institution Building, the History and Technology Building, the Natural History Building, the Arts and Industries Building, the Fine Arts and Portrait Galleries Building (housing the National Portrait Gallery and the National Collection of Fine Arts), and the Renwick Gallery. The Department performs various combinations of these functions for nine other research, collection, special purpose, and support facilities, including the Chesapeake Bay Center for Environmental Studies, the Oceanographic Sorting Center, the Belmont Conference Center, and the Silver Hill Facility (which provides for the restoration and preservation activities of the National Air and Space Museum, and houses reference collections of aircraft, and other objects of science, technology, art, and natural history). Services will be extended to include two additional museums in FY 1973; i.e., the Joseph H. Hirshhorn Museum and Sculpture Garden and the Cooper Hewitt, a national museum of design. The total floor space of all the Smithsonian buildings is 3,656,000 square feet, and includes 18 different sites in the Washington Metropolitan Area, and one in New York City.

The Department provides utilities, and the servicing, repairing, and operating of refrigeration, heating, temperature and humidity control systems. It furnishes transportation and communications services and performs improvements and alterations to the buildings. Among the Department's responsibilities are safety, physical security, and disaster programs, as well as engineering, architectural services, construction management, space management, feasibility studies, and other professional services.

The FY 1973 requested increase is \$1,155,000 for increased provision of the above services, to meet price increases in various areas, and to begin services in new building space. In addition, \$386,000 are being sought for necessary pay increases of current employees.

Need for Increase

1. Joseph H. Hirshhorn Museum and Sculpture Garden (44 positions; \$410,000).

The Joseph H. Hirshhorn Museum and Sculpture Garden is scheduled for initial occupancy by the Smithsonian Institution in the latter part of FY 1973. The Buildings Management Department must service the building while the final construction work is being completed. Included in the final phase is the installation of special equipment and the operation and maintenance of heating, air-conditioning, and humidity control systems which must be activated prior to the opening of the Museum to the public.

1/ FY 1972 appropriation adjusted by funds lapsing in 1972.

During the FY 1973, an initial staff of 44 positions (14 man-years) will be required to give minimal protection and custodial services and provide mechanical operation and maintenance to the plant, on a 24-hour basis, seven days a week. Funds in the amount of \$118,000 are required to provide an initial staffing level of 22 guards (sufficient to man four or five posts around the clock), 10 mechanics, and 12 custodians. Funds are also requested for related expenses such as utilities and communications (\$127,000); the installation of fire detection and other systems, and miscellaneous contract services (\$75,000); custodial supplies and materials (\$40,000); and cleaning and buildings maintenance equipment items (\$50,000). This is a requested increase of \$410,000 for the initial protection, operation, and maintenance of this new Museum facility.

2. Cooper-Hewitt Museum (9 positions; \$85,000)

The Cooper-Hewitt, a national museum of design, is located in New York City. This building contains approximately 80,000 square feet of floor space. The Buildings Management Department will be required to extend its services to the Museum in FY 1973. This Department will give initial basic services to safeguard the building and its contents, to provide guard protection, custodial, and laboring services, and mechanical maintenance to the heating and ventilating system.

The nine additional positions required to provide a basic initial staffing level during FY 1973 are two guards, two custodial employees, and five mechanics (\$83,000); and a minimal amount of \$2,000 for supplies and materials. A total increase of \$85,000 is requested for the initial cost of providing services to this new museum activity.

3. Utilities and Communications (\$250,000).

In FY 1971, the Buildings Management Department spent \$1,600,000 for utilities and communications. Present information on higher unit costs and additional use indicates that this mandatory expense will increase somewhat in FY 1972 and rise to \$1,850,000 in FY 1973. The requested additional \$250,000 includes \$130,000 to fund the increase in the price of steam, which has increased approximately 40 percent since 1970. In fiscal 1970, the Department was paying \$1.55 per thousand pounds. The price for fiscal 1972 is \$2.09 per thousand pounds through November 1971. Beginning in December 1971 the price has increased to \$2.30 per thousand pounds.

Also included in this amount is \$115,000 to provide for the increased usage of electricity and steam, resulting in part from the addition of several second floor decks in the high ceiling areas of the Arts and Industries Building, which will provide additional offices, exhibit areas, and serve other public purposes. An additional \$5,000 is required to cover the Federal Telecommunications System intercity telephone services based on a projection by the General Services Administration.

4. Protection and Surveillance Shortages (21 positions; \$162,000).

The present protection staff consisting of 328 guards and supervisors provides physical security for the Smithsonian Institution buildings and grounds and for the National Collections, and other property. This staff is also responsible for the overall control and security of all persons using these facilities, including

general public, special visitors, staff, and visiting students and researchers. Approximately 14 million persons visited the Smithsonian last year.

Twenty-one additional guards (\$155,000) are requested to provide improved security for the exhibits in the new halls and galleries which have recently been opened or are planned to be opened to the public. Among them are the Hall of Musical Instruments, and the Numismatics, Graphic Arts, Photography, and Philately Halls in the new Communications area in the History and Technology Building, and the World of Living Things and Physical Geology exhibitions in the Natural History Building. The increase also is needed because other areas are inadequately covered and existing posts are too large for proper surveillance. Support funds of \$7,000 are also requested for supplies and materials and equipment for the additional guards. The following table shows the growth of the protection problem.

<u>Offenses</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972(thru Dec 31)</u>
Arson	0	1	0
Assault	4	7	6
Burglary	3	11	0
Fraud	0	1	0
Larceny	47	69	49
Narcotics incidents	0	1	1
Rape	0	1	0
Rape attempt	0	1	1
Robbery(including muggings)	4	8	1
Vandalism	8	24	19
Weapons carrying	0	1	1
Bomb or arson threats	8	4	5
	<u>74</u>	<u>129</u>	<u>83</u>

5. Shortages in Custodial and Building Services (10 positions; \$58,000).

The present buildings services staff of 266, including janitors, telephone operators, vehicle operators, and supervisors provide building services for approximately 3,656,000 square feet of floor area, and perform regular custodial services in support of staff operations and visitor use of public spaces. These employees provide many special requested services in connection with public services and educational programs during regular hours and on weekends and holidays. They are also responsible for moving services, transporting museum objects, operating 55 elevators, providing pest-control services, grounds-keeping, and window cleaning.

Based on cleaning standards developed from the General Services Administration, private industry, and actual operating experience, the Smithsonian has established standards for servicing its museums and art galleries. Primary consideration has been placed on cleaning exhibit and public areas which comprise about 60 percent of the total net floor area. Work frequency rates are considerably higher in these areas because of the millions of people crowding through the buildings each year, and special care must be exercised in performing work because of the presence of valuable museum objects and extensive special finishes in gallery spaces.

The application of the cleaning standards in the Smithsonian buildings has verified a severe shortage of custodial employees. As the first step forward correcting this deficiency, ten additional janitors are requested to help provide adequate cleaning (\$56,000). Support funds of \$2,000 are also requested for uniforms, supplies, and materials for the additional janitors.

6. Space Rental (\$190,000).

New space is unavailable on the Mall for housing authorized programs and for their necessary support services.

In the past ten years employees working on the south side of the Mall have doubled while available office space has increased by no more than one third. In many cases exhibition space has of necessity been curtailed in order to preclude intolerable compaction of support staffs. In the Accounting area, for only one example, average worker space is greatly inadequate and precludes, in some cases, authorized staff expansion. Other essential support service functions are severely compressed. Business functions are fragmented in space ill-designed for the purpose. Space for expanded audit services must be gained. Remedial space needs exist in practically every support area.

In addition, the National Air and Space Museum must gain space to house any newly authorized staff increases required for the development of the new museum and its public programs. Space in the Arts and Industries Building for additional staff can only result from acquiring off-Mall space for functions which can be effectively relocated. Furthermore, restoration work must be initiated soon to ready the Arts and Industries Building for its increase in volume of visitors in 1976. This work would require that interim housing be acquired for a number of the building's present tenants.

By grouping in acquired rental space several closely associated administrative support groups which have until now been separated from one another (i.e., procurement, accounting, data processing systems), not only will new efficiencies of operation be made possible but other critical needs on the Mall can be accomplished with the space that would be recovered. The Museum of Natural History must gain added use of space for its required buildup of support programs. In the History and Technology Building the Conservation Analytical Lab would gain some space without which any substantial improvement in its services is impossible.

The only solution, since no Government controlled space is available in the required area, is the acquisition of suitable rental space. An estimated 28,000 square feet of additional office space is needed. Such space is presently available in a most convenient location including a computer housing available at no cost which would enable an inexpensive relocation of the computer center. Vehicular shuttle services will be provided to tie-in efficiently the new site with main offices and buildings on the Mall. Relocation costs are included as are minimal expenses for tenant changes. For these purposes \$190,000 is needed.

PERMANENT EMPLOYEES

Senator BIBLE. How many people do you employ, full time?

Dr. RIPLEY. Mr. Bradley can answer that.

Mr. BRADLEY. Mr. Chairman, we have onboard at this moment 2,189 full-time permanent employees with a ceiling of slightly more than that, 2,202.

Senator BIBLE. And where are they employed?

Mr. BRADLEY. Primarily here, sir. We have about 57 in Cambridge, Mass., and 52 in the Panama Canal Zone. We have some expeditions at various points around the globe. Essentially we are based here in Washington.

Senator BIBLE. All right. And your emphasis is on S. & E.?

Dr. RIPLEY. I believe this is the nub of our program, plus I want to talk about renovations, restorations, and construction of buildings and the foreign currency program. You have already heard about the science information exchange.

Senator BIBLE. Yes; I heard about that.

SALARIES AND EXPENSES

Dr. RIPLEY. We are asking for an increase of \$8,794,000 over an estimated revised base of \$44,170,000 in "Salaries and expenses."

Senator BIBLE. Last year you received how much and you were permitted to spend how much? What kind of freeze—did you take a 5-percent freeze?

Dr. RIPLEY. Yes; we did. Our appropriation was \$44,701,000 and our revised base for fiscal year 1973 is \$44,170,000 as I mentioned.

Senator BIBLE. And you want to increase that an additional \$8,794,000?

Dr. RIPLEY. That's right.

Senator BIBLE. Will you be permitted to spend it if the Congress appropriates it?

Dr. RIPLEY. That is our understanding.

Senator BIBLE. How much carryover do you have?

Dr. RIPLEY. No carryover at all. We have a lapse due to employment limitations of \$1,106,000 in the fiscal year 1972.

Senator BIBLE. Would you repeat that?

Dr. RIPLEY. \$1,106,000.

Senator BIBLE. What does that figure represent?

Dr. RIPLEY. That is a lapse due to employment limitations set by the executive branch after the appropriation of our 1972 budget. That was a cutback, in other words.

Senator BIBLE. That was a cutback. The funds haven't actually lapsed yet; they lapse on June 30.

Dr. RIPLEY. That's right.

Senator BIBLE. That is your estimated lapse on June 30?

Dr. RIPLEY. That's right, except to the extent that these funds now in reserve are released by OMB to cover the current year's costs of legislated general schedule and wage pay raises this year. The "Salaries and expenses" requested increase of \$8,794,000 includes a necessary pay increase of \$1,082,000 for current staff of which \$410,000 is for the full year cost of the wage pay rise in November 1971. We assume that

the fiscal year 1973 costs of the recent general schedule raise will be met by a budget amendment.

Senator BIBLE. Now, the special and science programs, and the history and art programs are all before us in your full statement.

PERSONNEL INCREASE

Total employment is 2,189 and that will be the figure you have next year, as I understand it?

Dr. RIPLEY. That will be by June 30.

Senator BIBLE. How about going into the next fiscal year, what will your total employment be?

Dr. RIPLEY. The total employment we are requesting would be estimated at 2,814, including an increase of 244 positions.

Senator BIBLE. You say you have 2,189 aboard today, is that what I understood you to say?

Dr. RIPLEY. That's right.

Senator BIBLE. How many will you have aboard if you are granted everything you are asking for?

Mr. BRADLEY. The figure we gave you was employment, the number of authorized positions that pair off with that, are 2,570 this year.

Senator BIBLE. But you had to take a cutback so you are back to 2,189 aboard?

Mr. BRADLEY. That's right, against a ceiling of 2,202. Now, in 1973, should we secure total authorized positions of 2,814, against a normal lapse rate of 8 percent a year, that means we would have approximately 224 of those positions vacant, so to answer your question, on board at the end of 1973 would be in the neighborhood of 2,600.

Senator BIBLE. 2,600?

Mr. BRADLEY. Yes, sir.

Senator BIBLE. You say a normal 8-percent lapse. What is that, attrition?

Mr. BRADLEY. Yes, sir; it includes retirement, delays in finding the right people for the right job, and so forth.

Senator BIBLE. Those are the items that make up the 3-percent lapse?

Mr. BRADLEY. That's right.

Senator BIBLE. All right.

We heard about science information exchange, we heard about the construction items in the zoo, we heard about your observatory, and you detailed the rest of the items very well in your opening statement. Let me ask a few questions.

RELEASE OF RESERVED FUNDS TO MEET SALARY INCREASES

About 5 percent of fiscal year 1972 salaries and expenses appropriations are frozen. Let me repeat that, about 5 percent of that was frozen by the Executive OMB in fiscal year 1972. Of the amount that was frozen, I suppose most of that was reprogrammed for salary increase, is that correct?

Dr. RIPLEY. Yes, sir; we believe it will be released to cover salary increases.

Senator BIBLE. And your estimate is that you will have a lapse at the end of this fiscal year of just a little over \$1 million?

Dr. RIPLEY. That is right, unless it is released for authorized pay raises.

NATIONAL MUSEUM OF NATURAL HISTORY

Senator BIBLE. For the National Museum of Natural History, you propose a program increase of \$580,000. In this amount are funds for a physical sciences laboratory? Is this to be an organization within the museum or will it require separate building facilities?

Dr. RIPLEY. I would ask Dr. Cowan to speak to this, Mr. Chairman.

Senator BIBLE. Certainly.

Dr. COWAN. The answer to your question is the physical sciences laboratory will not require a new building. We will construct it and install the equipment within the existing building.

Senator BIBLE. Within the framework of the existing building?

Dr. COWAN. Yes, sir.

ELECTRONIC DATA PROCESSING

Senator BIBLE. You are asking for an increase of \$80,000 for electronic data processing applications. Is that within the Museum of Natural History?

Dr. COWAN. Yes, sir.

Senator BIBLE. How much did you get for this purpose last year?

Dr. COWAN. This current year, fiscal 1972?

Senator BIBLE. Yes.

Dr. COWAN. We are spending this year something just under \$300,000. Twenty-one people are employed in 16 projects in five departments.

Senator BIBLE. You received \$300,000 last year and you want to increase that to \$380,000?

Dr. COWAN. Yes, sir.

Senator BIBLE. What rate of funding will be required in coming years?

Dr. COWAN. Do you mean where are we headed in terms of operational funding?

Senator BIBLE. Will the funding remain substantially at \$380,000 a year?

Dr. COWAN. No, sir.

Senator BIBLE. How much will it remain at?

Dr. COWAN. The whole area of data processing is a relatively new one and a growing one. It is rather difficult to say where it ends, because new opportunities for applying biological data to national problems are continually expanding. Ten years ago we didn't know we needed the kind of information we do today to solve environmental problems. Much of what we do now is to gather the information and control it so it can be applied to real world problems. To give you an example in the area of data processing we expect to apply the computer technology to four groups of invertebrate animals this coming year in the marine environment, all of which are chosen because they have the potential of acting as indicators of change in the environment. It is this sort of need that makes it difficult to anticipate where such a program will level off.

Senator BIBLE. Well, it is safe to say it is going to increase in funding each year?

Dr. COWAN. Yes, sir.

Senator BIBLE. You are going to ask for more money as your requirements become greater?

Dr. COWAN. Absolutely.

Senator BIBLE. All right. That answers the question.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

Now, where do the islands in Gatun Lake come in. Who is the boss on those?

Dr. RIPLEY. I would like to ask Dr. Challinor to talk about that.

Senator BIBLE. Tell us about the problems with respect to the items of Gatun Lake. Where is that?

Dr. CHALLINOR. In the middle of the Canal Zone. When they dammed the Chagres River they made a big lake which has existed since 1914 in the middle of the Panama Canal. This furnishes the fresh water to operate the locks. When the dam was built it flooded the low areas and what was once a mountain became a large island. The Smithsonian has conducted research in tropical biology on this island for the last 25 years. It was assigned to the Smithsonian shortly after World War II, I believe it was 1946.

Senator BIBLE. You do tropical research on what?

Dr. CHALLINOR. Here we are studying in a rather basic fashion what happens in the tropics. In other words, in the tropics we have what has seemed to be in the past a relatively stable environment. There is hot weather and the animals and plants seem to survive in a rather steady state. As we look into this, we find that animals that live in the tropics, for example, vertebrates and insects, are highly susceptible to small changes in temperature. So what seems to be a stable environment is not nearly as stable as we thought. What we are therefore trying to determine is how the energy in the tropics cycles, how, when the sun hits the leaves of the trees, the trees grow, these leaves in turn are eaten by various animals and the waste from the animals falls on the forest floor and this is decomposed and taken up by the trees. There is a tremendous nutrient cycling that occurs in the tropics and we are getting some clue as to how productive the tropics are with rather precise, scientific measurements.

Senator BIBLE. What other agencies are engaged in this work? Don't the National Institutes of Health have many operations in the tropics?

Dr. CHALLINOR. The National Institutes of Health are often primarily concerned with those animals and insects that carry diseases, that live in the tropics or even those birds, for example, that spend the winter in the tropics and fly up to this part of the world in the summertime. We have been cooperating with such agencies as this to learn about insects, for example, ticks and mice that live on birds that spend the winter in the tropics and come up north in the summertime.

Senator BIBLE. How many agencies do work in the tropics?

Dr. CHALLINOR. In Panama there is the Army Tropical Research Institute, but no other government agencies. Mr. Chairman, can compare with the amount of basic tropical biological research that is done by the Smithsonian. This is on a worldwide basis. The other government agencies do rather mission oriented projects.

STATUTORY AUTHORITY

Senator BIBLE. Are you given this commission by a congressional act?

Dr. RIPLEY. Yes, we were. In 1946 we were asked by Congress to take over this station which had been run previously by a consortium including the Smithsonian. The mission is biological, not medical.

Senator BIBLE. That isn't my question. My question is where in the law books do I go to say my good friend Dr. Ripley has any business doing what he is doing now?

Dr. RIPLEY. Title 20.

Senator BIBLE. I would hate to be appropriating all of this money and find that you didn't have the authority to be doing what you are doing.

Dr. RIPLEY. We are authorized, Mr. Chairman.

Senator BIBLE. I know that, but you point out where.

Dr. RIPLEY. We will do that, Mr. Chairman. It is 20 U.S.C. 79-79e. (The information follows:)

According to its basic charter for the increase and diffusion of knowledge among men, the Smithsonian Institution, since 1846, has carried out scientific research particularly in the fields of biological and tropical scientific observation and investigation.

Specifically, with regard to Barro Colorado Island, the Act of July 2, 1940 and the Reorganization Plan No. 3 of July 16, 1946, provide that the Smithsonian shall administer a program of scientific research on the Island. Included is responsibility for construction and maintenance of laboratory and other facilities in that area.

Senator BIBLE. How much do you spend at Gatun Island?

How much do you spend at Gatun Island?

Dr. CHALLINOR. For the total Tropical Research Institute program, we are requesting six new positions and a total of \$854,000 for fiscal year 1973.

Senator BIBLE. That gives you how many people?

Dr. CHALLINOR. This will give us 58, we have 52 there now and would like to add six more.

RADIATION BIOLOGY LABORATORY

Senator BIBLE. An increase of \$155,000 for creation of a laboratory is required at Rockville. Is that Rockville, Md?

Dr. RIPLEY. Yes, sir.

Senator BIBLE. Has the move to the laboratory been completed?

Dr. RIPLEY. Yes, sir.

Senator BIBLE. How much do you see as additional monetary requirements to place the laboratory in full operating condition?

Dr. CHALLINOR. It is about \$750,000.

CHESAPEAKE BAY CENTER

Senator BIBLE. All right. For the Chesapeake Bay Center, two additional positions are requested. How many personnel are employed there now?

Dr. CHALLINOR. Five persons.

RHODE RIVER STUDY

Senator BIBLE. Is the study carried on at this Center relating to the Rhode River a new undertaking. What is the annual estimated cost of this study?

Dr. CHALLINOR. I would have to break that down, Mr. Chairman, I would refer that to the record.

Senator BIBLE. Supply that for the record and tell me how long the study will continue, and tell me, for my information, where the Rhode River is.

Dr. CHALLINOR. The Rhode River is about 7 miles south of Annapolis, Md. on the shore of Chesapeake Bay.

Senator BIBLE. What have you been studying there?

Dr. CHALLINOR. Here we have about 1,700 acres of relatively undisturbed land and are expecting about 600 acres more. There is no equivalent amount of acreage between Baltimore and Norfolk of this size that we are aware of under one owner. This land will give us a chance to study what happens to an estuary when various amounts of fertilizer and sewage effluent are discharged in a given watershed. What we have found is that natural organisms in the estuary are capable of absorbing and recycling all of the nitrates and phosphates that come into this small watershed. We are able to advise the State of Maryland, for example, that if a housing development should be built on this watershed, that might allow so many more nutrients into this watershed, that the system could collapse and we would have a condition in the estuary similar to what is now happening in Lake Erie. The water would become too rich for the organisms in the estuary to recycle and get rid of them.

(The information follows:)

The study of the Rhode River estuaries and the adjacent land of the Chesapeake Bay Center for Environmental Studies began in 1965, with the employment of the first Director. The present Director was appointed in 1968, and research at the Center has expanded rapidly. The study of this unstressed ecosystem is a long term cooperative venture that involves the Smithsonian, Johns Hopkins University, the University of Maryland, the U.S. Geodetic Survey, National Ocean Survey, National Aeronautics and Space Administration, Atomic Energy Commission, Catholic University, Cornell University, and the Maryland Department of Natural Resources. Although there are only five Smithsonian federal employees assigned to the Chesapeake Bay Center for Environmental Studies, the Smithsonian is the lead agency for a \$127,250 grant from the National Science Foundation as part of its RANN (Research Applied to National Needs) program to study the Chesapeake Bay. The institutions, their scientists involved, and the primary distribution of the NSF grant are shown below.

	Scientists	NSF funds
Smithsonian:		
Chesapeake Bay Center for Environmental Studies.....	1	\$41,100
Radiation Biology Laboratory.....	1	
National Museum of Natural History.....	2	
Environmental Sciences program.....	1	
Office of Environmental Sciences (ecology).....	1	62,600
U.S. Geodetic Survey.....	2	
Catholic University.....	2	
Johns Hopkins University.....	7	
University of Maryland.....	4	23,550
Total.....	21	127,250

CHESAPEAKE BAY STATION CONSORTIUM

Senator BIBLE. How many other Federal agencies are engaged in similar studies?

Dr. CHALLINOR. I would imagine three or four others at the Chesapeake Bay Station. We have two scientists there from the U.S. Geological Survey and people from Johns Hopkins and the University of Maryland working with us.

Senator BIBLE. Is this a cooperative undertaking or consortium at Rhode River?

Dr. CHALLINOR. There is a formal consortium consisting of Johns Hopkins, University of Maryland, and the Virginia Institute of Marine Sciences. They are engaged on a baywide research project. This involves bureaus of the Federal Government as well as those of the two States involved, Maryland and Virginia, to try to understand what is happening to Chesapeake Bay, how much more stuff can be dumped into it before the whole system collapses.

POTOMAC RIVER STUDY

Senator BIBLE. Do you have the same kind of study going on in the Potomac?

Dr. CHALLINOR. Not working on the Potomac precisely but as part of the Chesapeake Bay system, it is being studied.

Senator BIBLE. Whom?

Dr. CHALLINOR. By the Corps of Engineers for one. There is a Potomac Watershed Commission. I believe this is a State commission, and I can furnish that for the record.

Senator BIBLE. Yes, furnish that for the record.

(The information follows:)

ORGANIZATIONS STUDYING THE POTOMAC RIVER

Corps of Engineers.

Upper Potomac River Commission.

Interstate Commission on the Potomac River Basin.

Potomac River Fisheries Commission.

Environmental Protection Agency—Water Quality.

Chesapeake Biological Laboratory of University of Maryland.

Chesapeake Bay Institute of Johns Hopkins.

Virginia Institute of Marine Sciences.

American University.

Philadelphia Academy of Natural Science.

District of Columbia Department of Health.

PREPARATION OF ENCYCLOPEDIA OF THE NORTH AMERICAN INDIANS

Senator BIBLE. One of the programs under the heading, Center for the Study of Man, is preparation of the Encyclopedia of the North American Indians. How many of the personnel authorized at the Center devote their time to the American Indian programs?

Dr. RIPLEY. Five, presently.

Senator BIBLE. How many of these are American Indians?

Dr. RIPLEY. None.

Dr. CHALLINOR. Based at the Smithsonian, Mr. Chairman, I do not believe that any of the five people now working on the encyclopedia, are North American Indians. However, within the total project of

writing the chapters and volumes, there are at least half a dozen and I will be glad to furnish their names for the record.

Senator BIBLE. Furnish that for the record. If you are going to write about North American Indians I would like to know how many you have involved in the program.

Dr. CHALLINOR. I will supply that for the record.

Senator BIBLE. They should know everything that goes along with the Indian culture.

(The information follows:)

The names of North American Indians now working on manuscripts for the *Encyclopedia of North American Indians* are as follows:

Alfonso Ortiz

D'Arcy McNickle

Indian members of the Volume Planning Committee include:

Roger Buffalohead

Vine Deloria, Jr.

Edward Dozier (Deceased)

Jack D. Forbes

Bea Medicine

Robert K. Thomas

All of the above are also authors of chapters in the *Encyclopedia*. In addition, 33 other Indians have agreed to write articles and 13 more have been invited, but have not yet replied. Many more Indians will be asked to write articles in the few volumes which have not yet been planned in detail.

ANTHROPOLOGY IN SOUTH AMERICA

Senator BIBLE. What other kind of projects are carried on at the Center?

Dr. CHALLINOR. We have an urgent anthropology program involving small grants for research and study of endangered cultures. For example, for \$1,000, we were able to get a scientist in Peru to study a tribe of Indians, the Jivaros in the upper regions of the Amazon. In another case we were able to give \$900 to a man in Colombia to study a small group of Indians there. We can furnish a list of the amounts, no amount is greater than \$1,000, and the total program runs about \$10,000 a year. This year we got a private grant of \$5,000 so that half of the \$10,000 is from private sources.

Senator BIBLE. Furnish that information for the record.

(The information follows:)

Grants Made in FY 1971

<u>Grantee</u>	<u>Title of Project</u>	<u>Amount</u>
Lamb, Venice	Narrow Strip Handloom Weaving in Ghana: Study and Collection	\$ 800
Malcomb, L.A.	Growth and Development in Various New Guinea Communities	700
Eriksson, Aldur W.	Analysis of Blood Samples for Enzyme Group Studies collected in Northeast Lapland, Finland	1,000
Takeda, Jun	A Study of the Traditional Japanese Hunters (Matagi) of the Village of Utto, Akita Prefecture, North Japan	300
Adams, Alice K.	Demography, Descent Groups, and Marriage among the Gitksan	834
Siverts, Henning	Study of the Aguaruna Jivaros on the Upper Maranon, Departamento de Amazonas, Peru	1,000
Lancelot, Francine	A Lexicology of Steps used in "Farandoles" in Southern France	1,000
Osborn, Ann	Study of the Tunebo, Northeastern Colombia	1,000
Dias, Ondemar F., Jr.	An Archeological Project in Minas Gerais, Brazil	650
Maceda, Jose	An Ethnomusicological Survey of the Phillippines	1,000
Whittier, Patricia	Completion of an Ethno-Linguistic Survey of East Kalimantan (Borneo) Indonesia	950
Ochs, Peter	Study of Puluwatan Oral Lore	850
Fabre, Daniel and Lacroix, Jacque	A Collection of Folktales in Bas- Languedoc and Festivals in the Pyrenees and in Languedoc	1,000
Beckerman, Stephen J	A Study of the Bari (Motilones) Colombia	990
Basso, Keith H.	Study of the Writing System of Silas John (A Western Apache Shamen)	\$1,000
		<hr/> \$13,074

CENTER FOR SHORT-LIVED PHENOMENA

Senator BIBLE. You indicate that the Center for Short-Lived Phenomena will begin no new activities either in fiscal year 1972 or fiscal year 1973 which will require Federal funds. How much do you receive in non-Federal funds for support of this center?

Mr. JAMESON. There are two outside sources of funding for the Center, Mr. Chairman. In fiscal year 1972 we will get about \$22,000 of subscription income and we currently expect in grants and contracts for fiscal year 1972 no more than about \$2,000, although the center is pursuing proposals they have submitted to various other agencies.

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

Senator BIBLE. You are proposing an additional \$23,000 to continue the development of a computerized inventory of the National Historical Collections. How much is available for this purpose in fiscal year 1972?

Dr. RIPLEY. I would like to ask Mr. Blitzer, if I could, to discuss this question.

Mr. BLITZER. All that has been done in this year is to have a pilot study that merely required staff time and no funds as an experiment to see whether this kind of system for this kind of collection would be appropriate. The museum has chosen two or three hundred 18th-century objects all having to do with measurement which are contained in all 20 divisions of the museum. The curators have worked on this with our own Information Systems Division, following the lead of the Natural History Museum, to try to have a compatible system between the two museums. They have gone far enough into this to think it is a feasible idea. This small request for \$23,000 is to go further with designing the system more than anything else.

Senator BIBLE. Will that be an ongoing program at that level?

Mr. BLITZER. We hope at a somewhat higher level. We would like to have all 16 million objects ultimately stored in the computer.

Senator BIBLE. You seem to indicate that with adequate funding, a fully computerized system can be completed within 10 years, is that correct?

Mr. BLITZER. That is the estimate: 10 years at about \$100,000 a year.

Senator BIBLE. A reading of the paragraph on preventing deterioration of objects in the National Historical Collections indicates that there is no such program in operation at this time. Is that correct? If not, what program does exist?

Mr. BLITZER. There is a minimal one.

ROBERT GILBERT COLLECTION OF PATENT MODELS

Senator BIBLE. Very well. You indicate that an example of the new objects which you desire to acquire is part of the Robert Gilbert collection of patent models. Last October you estimated that the cost of acquiring this total collection would be about \$3,250,000. Is it possible to acquire parts of this collection?

Mr. BLITZER. Yes; the Gilberts have approached us on this collection. Now they have simply put it up on the market piece by piece for sale to the public.

Senator BIBLE. Where is that collection?

Mr. BLITZER. It is in New York State. I would have to give you the exact name of the place. There are something like, I believe, 6,000 packing crates filled with this material. We have an arrangement under which curators from our museum can go and see what objects are being unpacked.

Senator BIBLE. How about the Patent Office in Washington, D.C. Doesn't it have a great number of patent models?

Mr. BLITZER. No, somehow all of these were sold. The Smithsonian has approximately 2,500 that we believe are the most important ones. But there is no telling what will turn up here.

Senator BIBLE. You certainly don't intend to acquire all of the patent models that have been patented, do you?

Mr. BLITZER. No, sir; this is to allow our curators to obtain items of historical importance for the museum as objects may turn up.

Senator BIBLE. How much of it do you intend to acquire? \$50,000 worth?

Mr. BLITZER. No; this is a long shopping list of items that the museum would like to have. It really depends on what is in those packing crates.

Senator BIBLE. But this year you are requesting \$50,000 to acquire patents, is that correct?

Mr. BLITZER. To acquire objects, yes.

Dr. RIPLEY. This is our total request, only part of which, presumably, would be used for patent models. In other words, the request is not solely for patent models. It is for acquisition of objects for the collection.

Senator BIBLE. But not entirely for patent models?

Dr. RIPLEY. No.

NATIONAL COLLECTION OF FINE ARTS

Senator BIBLE. To what extent does the National Collection of Fine Arts circulate exhibits in foreign countries?

Dr. RIPLEY. Dr. Taylor will answer that, Mr. Chairman.

Dr. TAYLOR. The question was, Mr. Chairman, how much do we engage in circulation of exhibitions abroad?

Senator BIBLE. That's right.

Dr. TAYLOR. We have been discussing the question of exhibitions abroad over the last 2 years because the expenditure had reached a point that I thought incompatible with our total budget.

Now, the expenditure this year is roughly around \$200,000. We have changed the program which once undertook the underwriting of international exhibitions, to furnishing only exhibitions for travel abroad. We are concerned only with facilitating these exhibitions, most of which come from other museums.

We are trying to present a clearer picture of what happens in American museums and in the American art world, presenting as many points of view as we can.

COOPERATION OF STATE DEPARTMENT AND USIA

The new program also includes in cooperation with the USIA and the State Department, sending people with the exhibitions. For example, we are about now to send an exhibition of the works of Wil-

liam H. Johnson, a black painter from the twenties and thirties, whom we have revived. This will go to several countries in Africa and Europe, winding up in England before it returns. With this exhibition will go the head of the museum of Fiske University to talk about the art.

1971-73 FUNDING

Shortly we will send an exhibition by two painters who happen to be American Indians abroad, and one of these painters will go along with the exhibition.

Senator BIBLE. Very well. What was the cost of this in 1971?

Dr. TAYLOR. Slightly over \$200,000.

Senator BIBLE. And it will be \$200,000 this year?

Dr. TAYLOR. Slightly under that.

Senator BIBLE. How much are you proposing for 1973?

Dr. TAYLOR. I will try to reduce it another \$25,000.

OTHER COUNTRY PARTICIPATION

Senator BIBLE. Do the governments of foreign countries participate in this in any way?

Dr. TAYLOR. In some ways. There are two helps. One interesting one comes from American business. For example, we recently did a large exhibition in Belgium which was totally funded by American business in Belgium.

Foreign governments often sponsor the Smithsonian Traveling Exhibition Service; they are usually shown in foreign museums. So their contribution comes through this.

However, foreign governments contribute in a different way. We also maintain a traveling exhibition program in this country, and many of these exhibitions come from abroad. In fact some of our very good ones come from abroad.

TRAVELING EXHIBITS IN UNITED STATES

Senator BIBLE. When you have your traveling exhibits around the United States, is the cost borne solely by the Smithsonian or does the State or gallery where you take it share in the expense?

Dr. TAYLOR. The Smithsonian expenditure is for the preparation and shipping of the exhibition abroad. Once it reaches the country it is booked and cared for through USIA. Once exhibitions from abroad reach this country, the cost is borne by the user. That is, the various museums to which they are circulated.

Senator BIBLE. Do you send your exhibits here at Smithsonian out to San Francisco or Seattle or Chicago or Portland?

Dr. RIPLEY. We do this with private funds. We do it on a rotating bookkeeping basis with private funds.

Senator BIBLE. You don't do it with Federal dollars?

Dr. RIPLEY. No, sir.

Dr. TAYLOR. We have about 100 exhibitions circulating in this country at the present time.

Senator BIBLE. You mean of objects of art, paintings, and whatever is under your command. What is under your command, paintings?

Dr. TAYLOR. The Renwick Gallery is also part of our museum. The rest would include painting, sculpture, and graphic arts.

COST SHARING

The circulation of exhibitions through the country is done on a share-cost basis. The salaries of the staff and the cost of shipping is borne entirely by the users of the exhibition. We have about 100 of them in circulation now and we open about 700 installations a year. Some are released to State art councils. These exhibitions run from those for very little money to exhibitions for museums at several thousand dollars. They range from very large and rather formal art exhibitions to simple ones that can get into schools and libraries to be shown under very simple circumstances.

Senator BIBLE. Who pays for the cost of insuring the exhibitions?

Dr. TAYLOR. The users. This cost is divided among the people who contract for the exhibition.

Senator BIBLE. That, I assume, can be a very expensive item. Didn't it cost a lot of money to bring the Mona Lisa over here, for example, in insurance. Who paid for that?

Dr. RIPLEY. I don't know who paid the insurance charges. It was under the sponsorship of the National Gallery.

Senator BIBLE. I have the Mona Lisa in the wrong department; is that right?

Dr. RIPLEY. It was brought over by the National Gallery of Art, not the National Collection of Fine Arts.

EXHIBITION FROM BELGIUM ON CITY OF ANTWERP

Dr. TAYLOR. We are about to bring an exhibition from Belgium on the city of Antwerp. This will be made up of rare items and very beautiful ones. It will be a high insurance exhibition. In the present plans for that, the insurance will be prorated within this country but covered by the Belgians for the transatlantic shipment.

What we are trying to do in this service, because costs have risen so very much and we are eager to reach people who don't have the money to support costly exhibitions—these exhibitions are getting into towns that have no other exhibitions—is to support some operations from our Museum staff.

PACKING AND SHIPPING IMPROVEMENT

We have established a workshop to improve packing and shipping conditions and also to help in the mounting of shows. We feel a great deal of study has to be made in the mounting of exhibitions and in their packing and security in travel. We have established a workshop to do this in the museum. So, in that sense we have begun to add some Federal support. We have asked now for a specialist in the mounting of exhibitions to allow us, among other things to mount more exhibitions drawn from the Smithsonian itself. In other words, we wish gradually to subsidize this operation more.

BUDGET REQUEST

Senator BIBLE. How many Federal dollars are there used by the National Collection of Fine Arts? What is the amount in the budget?

Dr. RIPLEY. The base is \$1,229,000, Mr. Chairman. We are requesting an increase of \$224,000.

Senator BIBLE. Do you have any figures that indicate the amount of visitors that go to see your fine arts when they are exhibited around the United States?

Dr. TAYLOR. There have been about 700 installations the past year but we have no exact figures on visitation. Certainly there are several million people involved in the showings.

Dr. TAYLOR. No.

NATIONAL PORTRAIT GALLERY

Senator BIBLE. You are requesting additional funds for personnel for the photographic laboratory of the National Portrait Gallery. Where is that located? Is that the one in back of the courts over here?

Dr. RIPLEY. It is in the same building as the National Collection of Fine Arts, the old U.S. Patent Building, between 7th and 9th Streets.

Senator BIBLE. Will those funds make it possible to do all the processing and printing in house?

Mr. BLITZER. Yes, sir. I will get you an answer for that.

Senator BIBLE. All right.

(The information follows:)

The Photographic Laboratory in the Fine Arts and Portrait Galleries Building serves both the National Collection of Fine Arts and the National Portrait Gallery. It presently has a staff of two photographers. The requested laboratory technician will permit the total staff of three to take care of all the needs of both Museums in the taking of photographs and the processing of black and white photographs. Most color processing will still have to be done outside this laboratory.

COMPLETION OF HIRSHHORN MUSEUM

Senator BIBLE. When will the Hirshhorn Museum and Sculpture Garden be sufficiently along to require the full 35 employees?

Mr. BRADLEY. Mr. Chairman, the Hirshhorn Museum will become substantially completed at the end of this calendar year, December of 1972. We have a going concern in New York where the collection primarily is stored. Some of it is in Greenwich, Conn. We are operating all of the functions of an operating museum there with the exception of the exhibition function and that depends upon the construction of the building on the Mall in Washington.

Senator BIBLE. And you are saying, then, it will be operational about the first of next year?

Mr. BRADLEY. It will begin to become operational about the first of next year in the sense that we will then be preparing to receive the public in the fall of next year.

Senator BIBLE. So you are going to have your grand opening in the fall of 1973?

Mr. BRADLEY. Yes, sir.

Senator BIBLE. Furnish for the record the items that are involved in furnishing and equipping the building.

(The information follows:)

HIRSHHORN MUSEUM FURNISHINGS AND EQUIPMENT REQUESTED IN THE FISCAL
YEAR 1973 BUDGET

Lighting:	
Interior/public	\$5, 000
Exterior/garden	10, 000
Lighting fixtures and lamps	17, 000
Library shelving	50, 000
Exhibit security system/painting exhibit security detector	50, 000
Landscaping	40, 000
Electronic tour guides	60, 000
Sales room equipment	50, 000
Coat room equipment	3, 000
Gallery equipment:	
Track mounted lights	40, 000
Draperies	60, 000
Benches	15, 000
Partitions	15, 000
Carpet:	
Galleries	110, 000
Fourth floor	20, 000
Auditorium	20, 000
Furniture and equipment:	
Offices and meeting rooms	55, 000
Library	40, 000
Lounge	25, 000
Seminar room	25, 000
Reception	25, 000
Registrar, mailroom, etc	19, 000
Stone pedestals (footings) and benches	95, 000
Conservation laboratory (ultra violet lighting, worktables, etc.)	65, 000
Examination laboratory (X-ray units, worktables, etc.)	38, 000
Photographic laboratory (screens, cameras, processing and printing equipment, etc.)	27, 000
Auditorium (seats, projectors, sound system, screen, stage curtains, etc.)	47, 000
Storage screens (143 screens 14 feet by 22 feet with two sides; fire extinguishing systems)	400, 000
Total	1, 426, 000

ARCHIVES OF AMERICAN ART

Senator BIBLE. The program increase requested for the Archives of American Art provides for establishing a San Francisco office. What is the need for this office in San Francisco?

Mr. BLITZER. The regional offices of the Archives, which exist now in Detroit, and Boston, and New York serve two purposes. In each of the regional offices there is a complete microfilm copy of every one of the 5 million documents contained in the Archives, thus the regional offices make all of these 5 million available to scholars and students in their areas. In addition, each office serves as a regional collecting point for the acquisition of documents for the Archives.

Senator BIBLE. How many people are employed in the ongoing operation?

Mr. BLITZER. They are one-man operations.

Senator BIBLE. This will be the same thing in San Francisco?

Mr. BLITZER. Correct.

PRIVATE FUNDING

Senator BIBLE. Supply for the record the amounts of money you received from private sources for the Archives of American Art. I

think you received \$115,000 this fiscal year. Is it holding about that level?

Mr. BLITZER. Yes, it might be slightly higher.

Senator BIBLE. Supply that for the record for a year's period of time. (The information follows:)

Private fund support for the Archives of American Art, largely from membership which includes a subscription to the quarterly journal and from special fund raising projects, amounted to a total of \$117,000 for fiscal year 1971 and should be about the same in fiscal year 1972.

NATIONAL ARMED FORCES MUSEUM

Senator BIBLE. For the National Armed Forces Museum Advisory Board, you propose an increase of \$20,000 which would be used for planning an American Revolution Bicentennial Outdoor Museum and development of a Dwight D. Eisenhower Institute. You can furnish for the record a plan for each of these two facilities, what the total cost of planning would be, the total cost of construction, and the length of construction time.

Dr. RIPLEY. We will be glad to. (The information follows:)

Under "Salaries and Expenses," in fiscal year 1973, \$9,000 are being requested to supplement planning for the outdoor museum's construction and to continue research to insure authenticity of the museum's activities. Under the appropriation, "Construction," funds are requested to plan the construction of an outdoor bicentennial museum on the Potomac River near Washington, D.C., in the amount of \$275,000. Approval of pending legislation (S. 2153 and H.R. 10311) would authorize such planning and site acquisition by transfer from the Department of the Interior.

Preliminary planning will embrace site development to include a modest visitor center, parking and other visitor facilities, a parade ground, a naval ordnance park, an outdoor theatre, and a boat landing. Special attention will be given to exhibits having significance to the national observance of the 200th anniversary of the American Revolution, such as a Continental Encampment and a palisaded fort. Fort Foote park is now relatively unimproved and initial planning must provide for site development and landscaping to enhance and protect the natural beauty of the site.

Approximately \$1,500,000 will be required in both fiscal year 1974 and in fiscal year 1975 for construction and development. The total cost of construction and the length of time for the development of the Bicentennial Outdoor Museum will be subject to annual increments as budgetary circumstances permit. These appropriations will be sufficient to implement the initial phase for the Outdoor Museum.

An inherent advantage of this location and of the plan of development is that future development can be undertaken in self-contained increments over the years. Future construction can include expansion of the visitor and parking facilities and the introduction of appropriate and timely exhibits.

BICENTENNIAL PARK PLANNING

Senator BIBLE. There also will be placed in the record your statement in support of an estimate of \$275,000 to plan the establishment of a bicentennial park at Fort Foote and Jones Point.

(The information follows:)

CONSTRUCTION
BICENTENNIAL PARK PLANNING

1971 Appropriation....	\$	0
1972 Appropriation....	\$	0
1973 Estimate.....	\$275,000	

Approval of now-pending legislation (S. 2153 and H. R. 10311) would authorize establishment of Bicentennial Park at two federally-owned sites on the Potomac--Fort Foote, in Prince George's County, Maryland, and Jones Point, on the southern edge of the city of Alexandria, Virginia. Pending legislation also would authorize formal negotiations with the Department of the Interior for transfer of these sites to the Smithsonian Institution. The sites have been offered informally by the National Park Service for outdoor museum use.

Preliminary planning for Bicentennial Park initially will embrace site development to include a modest visitor center, parking and other necessary visitor facilities, a parade ground, a naval ordnance park, an outdoor theater, and a boat landing. Special attention will be given to exhibits having significance to the national observance of the 200th anniversary of the American Revolution, such as a continental encampment, palisaded fort, etc. Fort Foote Park now is relatively unimproved, lacking in every way facilities necessary for operating an outdoor museum where visitation may be expected to total thousands of persons every day during good weather months. Thus, initial planning must take into account total site development, bearing in mind, where necessary, landscaping to enhance the natural beauty of the site. All such planning must be preceded by a careful evaluation of the site to insure that site development moves hand-in-hand with highest ecological standards.

It is essential that the above facilities be constructed and staffed so as to be in full operation, open to the public, on July 1, 1976. Comprehensive, detailed planning should be sufficiently well advanced by the close of FY 1973 to insure adequate time for actual construction, staff hiring and training during FY 1974 and 1975 to meet the planned opening date. Site development, planning and the preparation of staffing plans, scripts, etc., will be accomplished in collaboration with competent outside consultants. Approximately \$1,500,000 will be required in both FY 1974 and FY 1975 for construction and staffing.

DWIGHT D. EISENHOWER INSTITUTE

Dr. RIPLEY. Mr. Chairman, we are requesting one new position for this Armed Forces Museum Advisory Board. We are particularly keen about this because at a meeting held this week of the Board it was requested that we seek to engage a historian for the development of the Dwight D. Eisenhower Institute.

Senator BIBLE. Is the use of the funds here dependent on the enactment of legislation now pending to establish a bicentennial park?

Dr. RIPLEY. Yes, in reference to our request for planning; \$275,000 under construction.

OFFICE OF INTERNATIONAL ACTIVITIES

Senator BIBLE. Is the \$20,000 increase requested for the Office of International Activities solely for administration of the Special Foreign Currency Program?

Dr. RIPLEY. Yes.

Senator BIBLE. How much in American dollars does it cost?

Dr. RIPLEY. It costs just over \$100,000 in American dollars for the administration of the special foreign currency program.

DIVISION OF PERFORMING ARTS

Senator BIBLE. Under the Division of Performing Arts you ask an increase of \$60,000 for the Folklife and American College Theatre Festivals. How will this be divided between these two activities? And how much was available for each of them in fiscal year 1972?

Mr. WARNER. I don't understand that, Mr. Chairman.

Senator BIBLE. How do you divide that among these two activities?

Mr. WARNER. It is \$35,000, sir, for the Festival of American Folklife and \$25,000 for support of the American College Theatre Festival.

Senator BIBLE. How much did you have available to you for these activities in the current fiscal year, 1972.

Dr. RIPLEY. Mr. Jameson, do you have last year's figure for the two programs, Folklife and American College Theatre Festivals?

Mr. JAMESON. Yes, in fiscal year 1971, for the college drama festival we spent \$15,000 of Federal funds. In fiscal year 1972, we are expecting to spend \$25,000. The Folklife Festival in the calendar year 1971—this is the Folklife Festival that took place in July of 1971, which would have been in the early days of fiscal year 1972—we spent about \$90,000 worth of Federal funds. For the Folklife Festival this coming July we anticipate spending about the same amount of money.

Senator BIBLE. What was that Federal money again?

Mr. JAMESON. \$90,000.

Mr. WARNER. This year, Mr. Chairman, we will receive an outside contribution of \$232,000. This breaks down into \$155,000 of direct support from such agencies as the Bureau of Indian Affairs and some indirect or in-kind help.

Senator BIBLE. Supply that all for the record.

(The information follows:)

Bureau of Indian Affairs-----	\$40,000
Department of Labor-----	40,000
State of Maryland-----	55,000
American Airlines-----	10,000
Other (small donations)-----	10,000
Indian tribal councils (Navajo Tribal Council, White Mountain Apache, Pueblo Tribes Association)-----	20,000
Labor unions, in kind, 5 unions, \$6,500 each (lost time pay of craftsmen, travel, living expenses, equipment)-----	32,500
Maryland, in kind (for support of equestrian and metal trades ex- hibitions)-----	25,000
Total -----	232,500

ADDITIONAL REVENUE SOURCES

Senator BIBLE. Do you have any other revenue sources other than donations and those you just indicated?

Mr. WARNER. The festival is a free event but we get slight revenues from the sale of programs and food concessions also.

Senator BIBLE. Supply how much you get from every source of revenue. How much has the Bureau of Indian Affairs contributed during the past 3 fiscal years for the American Indian program, supply that for the record.

(The information follows:)

Revenue received from food, shop and program sales (food concessions, program sales, and craft shop sales) constitute the only revenue raising activities of the Folklife Festival.

1970 -----	\$12,500
1971 -----	14,900
1972 (estimated)-----	17,500

Bureau of Indian Affairs contributions for American Indian presentations

1970 -----	-----
1971 -----	\$25,000
1972 -----	40,000

ESTABLISHMENT OF SMALL TRIBAL MUSEUMS

Senator BIBLE. I note that it is contemplated that the Smithsonian Institution will assist in the establishment of small museums at tribal reservations. What do you expect this to cost in the coming year?

Mr. WARNER. We are making a position request for that purpose for an American Indian, Mrs. Clydia Nahwooksy, whose services have heretofore been supplied to us by the Bureau of Indian Affairs. We greatly appreciate the help they and she have given us and the request you have is here for a position to put her permanently on our staff. She is presently engaged in a survey of the many small tribal reservation museums, finding out what they want and what kind of help they need from us. That is what she is currently engaged in.

Senator BIBLE. Why does this come under your division rather than under the National Museum Act?

Mr. WARNER. That is a good question since she does help with the

National Museum Act programs as well as the Folklife Festival. But to answer your question directly, because of the American Indian presentations we have been making for the last 3 years at the Folklife Festival, Mrs. Nahwooksy has been very involved with the tribal communities and knows a good deal of what their ambitions are for various programs, including these small museums which many of the tribal councils would like to build. Some, in fact, have already been built with the help of the Economic Development Administration of the Department of Commerce. I understand there are about 25 such tribal museums in various stages of construction around the country. We very much want to help them with training and with what kinds of presentations and what kinds of objects they may put in their museum.

Senator BIBLE. Well, wherever it goes it is still a Federal dollar, I don't know if it makes too much difference. That's correct, isn't it?

Mr. WARNER. Yes, although I may say not entirely all Federal, because even in our folklife presentations of this year and last year, too, some of the tribal councils themselves contribute to travel and other incidental expenses of our Indian presentation.

Senator BIBLE. Well, I imagine that is minimal, though, isn't it?

Mr. WARNER. Yes, but I think it is very rewarding that they are interested.

Senator BIBLE. It depends on whether it is on a 9 to 1 basis or 9 to 10. I always like those 50-50 programs. They don't contribute on that basis, do they?

Mr. WARNER. No, sir.

Senator BIBLE. I think every time a person matches they have a little more interest in it. At least that applies to us mortals.

AMERICAN REVOLUTION BICENTENNIAL PROGRAM

For the American Revolution bicentennial program you propose an appropriation of \$1 million, an increase of \$600,000 over the amount provided last year. I wish you would tell me not why you missed the estimate last year because I think maybe it has increased in costs and salaries and everything else, but I wish for the record you would tell me exactly what you propose doing with \$1 million and what you expect the program requirements to be in 1974 through 1978.

(The information follows:)

The Smithsonian Institution is preparing a large-scale and varied program for the celebration of the Bicentennial of the American Revolution. The occasion is a major one, and we believe that our program has the appropriate range and depth. It will constitute a reaffirmation of our national ideals based upon a rediscovery of the past, a fresh understanding of the present, and a vision of the future. We believe that we have succeeded in creating a plan that combines events and activities which will begin and end during the Bicentennial years with solid scholarly and educational accomplishments which will live on in the decades ahead.

To the maximum possible extent, this program will be paid for out of regular appropriations. The special appropriations here requested will be used to enable the Institution to make the additional effort required by this extraordinary occasion. These special appropriations will be used entirely for activities that could not otherwise take place. There is no permanent commitment of personnel and other additions to the appropriations base, and the program will phase out after 1976.

With the aid of the FY 1971 and 1972 appropriations, we have been able to carry our planning to the stage where implementation may begin. The phased scheduling of the complex preparatory activities will permit completion of the entire program by 1976. The \$600,000 increase over FY 1972 reflects the new stage of realism in our plans which is the result of some two years of work by many people.

Program Components

1. Bicentennial Exhibition Construction and Facilities (\$490,000)

A number of special Bicentennial exhibitions will take place on

the Mall, but this appropriation will be used mainly for the two major ones, A Nation of Nations and Ecology-USA/200.

The National Museum of History and Technology's A Nation of Nations will show how groups of immigrants forged a new nation having its own nature and character. The various foreign peoples who came to this country are described and analyzed, with particular attention to native and minority groups. The contribution of American technologies, attitudes, popular culture, and political ideals to the world community will be shown.

\$350,000 will be needed in FY 1973 to enable the Museum to develop working drawings in preparation for construction. This exhibition will remain on view after the Bicentennial celebration as a central feature. Provisions have been made in the design to allow periodic updating.

Ecology-USA/200, to be located in the National Museum of Natural History, will present, in popular form, the technical and historical background of our present environmental dilemma. Designers have completed preliminary studies for an exhibition which will be innovative and participatory, allowing the visitor to interact with the exhibition as he explores the various alternatives open to us in the beginning years of our third century if we are to have a liveable and productive land. \$60,000 will be needed in FY 1973 to do detailed planning and to construct and test exhibit units.

An additional \$80,000 are requested to supplement the regular costs of Bicentennial exhibitions at the National Museum of History and Technology, the National Collection of Fine Arts, and the National Portrait Gallery.

2. Bicentennial Survey of American Art (\$250,000)

Four Smithsonian bureaus -- the National Collection of Fine Arts, the National Portrait Gallery, the Archives of American Art, and the Division of Performing Arts -- are combining their efforts to create a national inventory of American accomplishment in the arts and crafts since 1776. A survey of this scope and thoroughness has never before been undertaken and it will reveal to us (and to the world) a picture of American cultural achievement of unprecedented completeness. Individuals, organizations, and institutions throughout the country are already contributing to the Survey.

The Bicentennial Inventory of American Paintings Executed Before 1914 is an activity of the National Collection of Fine Arts. It will provide an important resource for the study of American art and history. The data are being stored in computerized form. Information is now pouring in from many states. The Inventory will require \$55,000 in FY 1973 for operating expenses and temporary appointments of personnel.

The National Portrait Gallery's Catalogue of American Portraits is compiling photographs and documentation on American Portraits in public and private collections throughout the country. For the Bicentennial, the Catalogue is concentrating on portraits of Americans living between 1770 and 1790. \$120,000 is requested in FY 1973 to enable field researchers to continue their work in the Carolinas, Georgia, Kentucky, and Tennessee.

The Archives of American Art's Bibliography of American Art will be a comprehensive reference work which will be a basic source for anyone working in this field for many years to come. It will go

beyond existing bibliographies in many ways, including a listing of important non-book materials. A special Bibliography staff will require FY 1973 support of \$50,000.

The Roots of American Folk Culture program of the Division of Performing Arts is surveying American folk traditions in music, dance, crafts, and storytelling in all 50 states. Urban and rural areas are receiving attention. Besides scholarly documentation, this program is resulting in a succession of live performances and demonstrations in connection with the Festival of American Folklife on the Washington Mall. Publications, films, and recordings are also being produced. \$25,000 will enable the Folk Culture program to continue through FY 1973.

3. National Outreach (\$210,000)

Numerous aspects of the Smithsonian Bicentennial Program are designed to carry the program to the nation. The Smithsonian Institution Traveling Exhibition Service (SITES), administered by the National Collection of Fine Arts, will produce and circulate nationally 45 special Bicentennial exhibitions. These traveling exhibitions will have subject matter in art, history, and science. These exhibitions will be made available at the lowest possible cost, so as to enable them to reach populations not normally served by traveling exhibitions. In FY 1973 three experimental exhibitions will be produced and sent out on tour at a cost of \$10,000.

A preliminary design study for the Anacostia Neighborhood Museum's Exhibits Production Center was commissioned and completed in FY 1971. It will be a combination of an exhibits workshop and a vocational training facility. The Center will design and produce circulating exhibi-

tions on subjects such as urban problems and the contributions of America's minority populations. These exhibitions will go not only to museums, but to community centers, store-fronts, and other non-museum settings. Efforts are being made to obtain matching funds from a large private foundation.

Some components of Smithsonian Bicentennial exhibitions will be constructed in the new Center. \$200,000 are requested to match private funds and allow the new facility to begin operation.

4. An Exposition for the Nation's Capital (\$50,000)

\$50,000 are requested to enable the Smithsonian to begin cooperative planning with the other agencies and institutions that will be sponsoring Bicentennial events and activities. The purpose of this planning will be to coordinate the many Bicentennial exhibitions, performances, and other activities and make it as easy as possible for the visitors who will come to Washington to have a coherent and meaningful experience. The Smithsonian proposes to work closely with the National Park Service, the government of the District of Columbia, and all others who are preparing Bicentennial programs.

NATIONAL BICENTENNIAL CELEBRATION

Senator BIBLE. Will that increase as much as the increase you applied for last year? In other words, you missed your estimate last year by \$275,000, and you projected it all the way through 1978. Your future forecast is going to be that much off.

Mr. BLITZER. I hope not, Mr. Chairman. I may say the reason for this substantial increase we are asking, which is larger than we imagined it would be, is the success of the programs we have begun, which have had a really magnificent reception from the National Bicentennial Commission, from the District of Columbia Bicentennial Coordination Center, and others.

Senator BIBLE. How many agencies got interested in the bicentennial project? Can anybody tell me what total Federal dollars are that go to that program?

Dr. RIPLEY. It would be a monumental study, Mr. Chairman.

Senator BIBLE. Well, supply for the record your best estimate of your costs for the bicentennial programs through 1978.

(The information follows:)

AMERICAN REVOLUTION BICENTENNIAL APPROPRIATION

	<u>FY 71</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>	<u>FY 77</u>	<u>FY 78</u>
<u>Major Exhibitions</u>								
Nation of Nations	75,000	175,000	350,000	750,000	850,000	600,000	-	-
Ecology/200		30,000	60,000	350,000	500,000	500,000	-	-
1876 Centennial Exhibition	20,000	10,000	-	-	150,000	250,000	-	-
Other Exhibits	125,000*	30,000	80,000**	150,000**	150,000	150,000	150,000	-
<u>Bicentennial Survey</u>								
Inventory of American Painting	50,000	40,000	55,000	75,000	75,000	75,000	-	-
Revolutionary Era Portraits	50,000	50,000	120,000	120,000	100,000	100,000	-	-
Bibliography of American Art	10,000	15,000	50,000	50,000	50,000	50,000	-	-
Folk Culture	25,000	15,000	25,000	75,000	100,000	100,000	-	-
<u>Outreach</u>								
Traveling Exhibits	-	-	10,000	100,000	150,000	150,000	150,000	-
Anacostia Traveling Exhibits	10,000	10,000	200,000	30,000	25,000	25,000	25,000	-
Center								
Handbook	10,000	-	-	-	-	-	-	-
Mall Festival	-	-	-	-	-	-	-	-
Planning & Admin.	25,000	25,000	50,000	50,000	50,000	50,000	500,000	-
	<u>\$400,000</u>	<u>\$400,000</u>	<u>\$1,000,000</u>	<u>\$1,750,000</u>	<u>\$2,200,000</u>	<u>\$2,550,000</u>	<u>\$875,000</u>	<u>0</u>

* Other exhibits in FY 71 includes: MHT Pavilions (30,000); History Map (12,000); Acquisition of Objects (40,000); Corridors, Modules, Films (40,000).

** Other exhibits in FY 73 and FY 74 includes: provision for traveling versions of exhibition openings in Washington

BICENTENNIAL INVENTORY

Senator BIBLE. One of your projects is the bicentennial inventory to be prepared by the National Collection of Fine Arts. You are asking \$55,000 for that. Is that carried in the regular appropriation for that National Collection of Fine Arts?

Mr. BLITZER. No, sir; that is in the special bicentennial program.

Senator BIBLE. What funds were available to the National Collection of Fine Arts in fiscal 1971 and 1972 for this purpose?

Mr. BLITZER. Amounts of \$50,000 in 1971 and \$40,000 in 1972 were provided from our special bicentennial line item. No funds were appropriated to the National Collection of Fine Arts for this purpose in either year.

Senator BIBLE. All right.

EXPOSITION FOR NATION'S CAPITAL

Senator BIBLE. You ask for \$50,000 for an exposition for the Nation's Capital. Supply for the record what you accomplish with this, and will that be a continuing program and at that level.

Mr. BLITZER. No, this really serves two purposes, sir. One is to allow us, now that we are getting this close to the bicentennial and plan, to have these many programs going on, to engage one person who will be fully responsible for coordinating our bicentennial programs within the Smithsonian and also for coordinating all of this with the other agencies in Washington. The remainder of the requested \$50,000 will be spent for planning among the Smithsonian and other agencies in Washington that are involved in this program, to see what we can do to make sure the sum of the parts of our various contributions is really a worthy bicentennial celebration for the Nation's Capital. We feel a great deal can be done by simple things like catalogs and graphics and things of that sort, to make this literally an exposition in Washington.

Senator BIBLE. Then this will continue at about this level through 1978?

Mr. BLITZER. Yes, I would estimate it might. The \$50,000 item?

Senator BIBLE. I am talking about the \$50,000 item.

Mr. BLITZER. This is essentially a small staff of one coordinator and a secretary and some planning funds.

Senator BIBLE. All right.

MAJOR EXHIBITIONS PROGRAM

For the record, give us an explanation of what you plan on doing with the \$775,000 that you project for the major exhibitions program. That can be supplied for the record.

(The information follows:)

The \$775,000 requested in the FY 1973 appropriation, an increase of \$250,000 over the FY 1972 base of \$525,000, will be used for three purposes. An amount of \$250,000 will be used to complete the "World of Living Things," an environmental exhibit in the National Museum of Natural History begun in FY 1972 with the base appropriation. This exhibition should be ready for a public opening in the latter half of FY 1973. An amount of \$500,000 will be used to design and produce "Of the People, By the People, For the People," an exhibit in the National Museum of History and Technology to show the relationships between the people and their government. And an amount of \$25,000 will be used to plan "The Earth-bound Benefits of Flight," an exhibit for the National Air and Space Museum

to show the many applications on earth of new knowledge and technology resulting from air and space flight and exploration.

NATIONAL MUSEUM ACT

Senator BIBLE. Last year \$600,000 were provided for implementation of the National Museum Act. Aside from the \$200,000 provided to the National Foundation on the Arts and the Humanities as required by law, what use did you make of this appropriation?

Dr. RIPLEY. I have Dr. Brooks here, Mr. Chairman, who is working with Mr. Bradley this year, and I would like to ask him to answer this as he has specialized in, among other things, studying the implications of the National Museum Act and our projections for it.

Senator BIBLE. Do you understand my question, Doctor?

Dr. BROOKS. It was to give you a reading of the use of the funds for this year.

PROFESSIONAL ASSISTANCE GRANTS

Senator BIBLE. Aside from the \$200,000 that you gave to the National Foundation on the Arts and the Humanities. You have \$600,000, take \$200,000 away from that, that gives you \$400,000; what did you do with it?

Dr. BROOKS. We have recommended, Mr. Chairman, some 18 grants amounting to \$346,000, under the purpose of the act, that is for professional assistance, training, research, and publication for the benefit of the national museum community.

NATIONAL ENDOWMENT FOR THE ARTS MUSEUM PROGRAM

Senator BIBLE. Now, I guess it was Nancy Hanks who testified before us last year, who was so intrigued with the National Museum Act, that she asked for some money to do some museum work of her own. What does Nancy Hanks do in the museum field that you don't do? You contribute to her, you give her—I don't know, what does she get, \$100,000 out of that \$200,000?

Dr. BROOKS. The \$100,000 spent by the National Endowment for the Arts as well as for the Humanities is supplied for those same purposes. However, the National Endowment for the Arts is also spending something close to \$4 million, as we understand it.

Senator BIBLE. That is the figure I thought I had.

Dr. BROOKS. We are very closely in touch with them, sir, and the purposes for which they spend the money differ in some degree from those we use under the National Museum Act.

For example, the National Endowment for the Arts spends money for acquisition of art works for museums; it spends money for the provision of capital improvements such as conditioning and security systems for museums; it spends money for operating expenses such as special exhibitions. None of these is included in the purposes of the National Museum Act and a substantial part of the \$4 million they spend goes for that purpose. Of course, the funds they spend under the National Museum Act are included and are for the same general purpose as those which we use.

The projects, however, are closely coordinated with the staff of the two endowments and we can say there is no duplication, that is double funding, of any project under the National Museum Act.

PROGRAM EMPLOYEES

Senator BIBLE. How many people are employed in the implementation of the National Museum Act?

Dr. BROOKS. Three people in the Smithsonian, sir.

PROFESSIONAL ASSISTANCE GRANTS

Senator BIBLE. Furnish for the record just exactly what you did with the \$400,000. You said you made some grants. Supply for the record where they were made, what museums and, more particularly, are these funds used on a matching basis?

(The information follows:)

A LISTING OF PROJECTS FUNDED TO DATE

A PROGRAM OF CONSULTANT SERVICES TO SMALL HISTORY MUSEUMS

By: American Association for State and Local History, Nashville, Tennessee, William Alderson, Director.

Amount Approved: \$26,850.

The American Association for State and Local History proposes to establish a consultant service for small museums, whose budget is less than \$50,000. A roster of qualified professionals created for this project will advise on such matters as exhibition policies, exhibit fabrication, preparation of labels, record keeping, elementary conservation techniques, and general administration. The grant covers administrative costs, consultant fees, and one-half of the traveling expenses. Under the provisions of the grant, the museum requesting the consultant service will pay the remaining half of the travel costs.

A PROGRAM OF TRAINING WORKSHOPS FOR HISTORICAL MUSEUMS

By: American Association for State and Local History, Nashville, Tennessee, William Alderson, Director.

Amount Approved: \$36,780.

Under this grant, the American Association for State and Local History will offer five different workshops to the staff members of Historical Museums and Houses. They are:

- (1) Interpretation of History in Museum.
- (2) Preservation of History through Motion Pictures and Television.
- (3) Developing Effective Interpretation of Historic Sites.
- (4) The Historical Society and Museum Security.
- (5) Conducting Local History Workshops.

SEMINAR AT WILLIAMSBURG

By: Colonial Williamsburg, Williamsburg, Virginia, James R. Short, Colonial Williamsburg Foundation.

Amount Approved: \$10,500.

For many years Colonial Williamsburg has given this successful seminar to "new-comers" in the area of administration of historical organizations and agencies. Mr. James R. Short of the Colonial Williamsburg Foundation has requested the above sum which is to be matched by the National Endowment for the Humanities to support the seminar which is experiencing increased costs and financial difficulties for the following reasons. First, the faculty has suggested that experienced administrators be included to broaden the seminar. Secondly, the American Association for State and Local History and the American Association of Museums are unable to continue their financial support.

PUBLICATION: GUIDE TO HISTORIC PRESERVATION, HISTORICAL AGENCIES, AND MUSEUM PRACTICES: A SELECTIVE BIBLIOGRAPHY

By: New York State Historical Association, Cooperstown, New York, Frederick L. Rath, Jr. Vice Director.

Amount Approved: \$23,925.

The New York State Historical Association published in December, 1970, the *Guide to Historic Preservation, Historic Agencies, and Museum Practices: A*

Selective Bibliography, the only reference work in the combined fields. The Association wishes to expand the current program and publish a revised edition of the *Guide* in 1974-75. Although the application as submitted is for three years, the Advisory Council recommends underwriting one year for the above sum and a promise to consider continued support based upon progress of the project and appropriations from Congress for the National Museum Act.

PROPOSAL TO DEVELOP A CURRICULUM IN MUSEOLOGY

By: American Association of Museums, Washington, D.C. Kyran McGrath, Director.

Amount Approved: \$27,100.

Under this grant, the American Association of Museums proposes:

- (a) to evaluate the effectiveness of current museum training programs
- (b) to develop within the museum profession an awareness of the educational potentials available to museums
- (c) to create an awareness in colleges and universities of the needs of museums in terms of college-trained personnel, and
- (d) to recommend guidelines for college and universities offering museology courses.

Although the application requested a total of \$31,600, the Advisory Council agreed that the project as outlined could not produce the publication of the committee's results in the time allotted by the proposal. Therefore, the committee deferred action on the publication funds until another meeting.

US-ICOM (SUPPORT GRANT)

By: U.S. National Committee of ICOM, Washington, D.C. Charles Cunningham, Chairman.

Amount Approved: \$20,000.

The US-ICOM Committee has requested the above sum to partially support the activities of the Committee and the salary of the Executive Committee.

A REQUEST FOR MATCHING FUNDS TO PERMIT TWENTY SUMMER WORK PROJECTS IN 1972

By: New York State Historical Association, Cooperstown Graduate Programs, Cooperstown, New York, Louis Jones, Director.

Amount Approved: \$12,750.

The Cooperstown Graduate Program, training conservators for the preservation of historic and artistic works, is now in its second year of function with its full commitment of twenty students. During the summer session, each student undertakes a work-project supervised by a master conservator. The Cooperstown Program has requested the above sum to support twenty summer projects which is to be matched by the New York State Council on the Arts.

SYSTEMATIC BIOLOGY: THE DEVELOPMENT OF A NATIONAL PROGRAM ON RESOURCES AND RESOURCE MANAGEMENT

By: National Museum of Natural History, Washington, D.C. Richard Cowan, Director.

Amount Approved: \$7,200.

The National Museum of Natural History requests partial support of studies leading to a conference and future action directed to the development of a national program for the management of the resources of systematic biology in the United States on a nationwide basis. The Advisory Council recommends supporting the publication and printing of the reports on the conference.

A LISTING OF PROPOSALS RECOMMENDED FOR FUNDING SUBJECT TO FINAL APPROVALS

A PROPOSAL FOR THE PREPARATION OF A BOOK ON "THE INTERPRETATION OF HISTORIC HOUSE MUSEUMS", AMERICAN ASSOCIATION FOR STATE AND LOCAL HISTORY, NASHVILLE, TENNESSEE

\$12,000

The American Association for State and Local History proposes to undertake the preparation of a book of about 200-250 pages on the interpretation of historic house museums or restorations. The book will treat not only the philosophy

of interpretation but also the use of equipment, media, and people in achieving effective interpretation. Preparation of the book would require an estimated fifteen months, and would be published by the Association in the spring of 1973.

MOBILE TRAINING LABORATORY FOR MUSEUM PERSONNEL, KANSAS STATE
HISTORICAL MUSEUM, TOPEKA, KANSAS

\$30,000 (2nd year funding approximately \$10,000)

There are approximately 106 small county-based museums in the state of Kansas. Because most of these operations are small, the resources of these organizations are extremely limited. Despite a wealth of good intentions, most of these museums are not operated on a professional level. The Kansas State Historical Society sends staff members to these organizations as they can be spared from their regular jobs, but because of staff time limitations, this can benefit only a small percentage of the local area museum.

To this end, this proposal establishes a museum training wagon stocked with tools a small museum can afford and a supply of inexpensive and expendable materials. Each museum will be visited for as long as a week over the two years. The consultant of the demonstration traveling unit would give talks illustrated by slides, photographs and artifacts, about conservation techniques, records keeping, etc. Also, methods to build inexpensive professional quality exhibits would be taught. It is believed that the onsite visit will make far more significant changes in the quality of the museums. The Advisory Council considered this proposal an excellent prototype for other states to develop.

THREE WORKSHOPS IN MUSEUM ADMINISTRATION, AMERICAN ASSOCIATION
OF MUSEUMS, WASHINGTON, D.C.

\$34,845

The American Association of Museums proposes to develop a comprehensive training seminar in Museum Administration to up-grade the qualifications of persons already employed in the museum profession and to help them meet the ever-increasing demands being made upon them by the public they serve. The seminar will be given three times at different geographic locations.

ASSISTANCE FOR A MUSEUM STUDIES PROGRAM, UNIVERSITY OF DELAWARE,
NEWARK, DELAWARE

\$15,750

The University of Delaware in conjunction with the Winterthur Museum, Hagley Museum and the Longwood Gardens requests funds to accelerate the development of a consolidated museum studies program. The funds will be used principally for library materials and information resources.

SUPPORT FOR CURATOR, A JOURNAL FOR THE MUSEUM PROFESSION, AMERICAN
MUSEUM OF NATURAL HISTORY, NEW YORK, NEW YORK

\$8,300

Curator, a journal for the museum profession, is published quarterly by the American Museum of Natural History. Now in its fourteenth year of publication, *Curator* was founded to fill a gap in the literature on museums and museum work. It offers an opportunity to professionals in museums of art, science and history to review and present their work, philosophy, objectives and methods. Over the past few years the American Museum of Natural History has encountered financial difficulties in publishing the journal. The funds requested will materially assist the American Museum of Natural History in bringing this significant journal to the attention of museum professionals nationwide, and will enhance the effectiveness of *Curator* as a source for the publication and distribution to the literature on museum problems, methods, and technology.

EXTENSION SERVICES IN MUSEUM TRAINING DEPARTMENT OF ART,
FISK UNIVERSITY, NASHVILLE, TENNESSEE

\$10,000

The Department of Art proposes to expand its services in museum training beyond the present curriculum of four courses in museum science through the extension of six workshops designed to meet the current needs of local, regional, and urban museum personnel by providing the following workshops.

(1) *Exhibition Techniques*.—Three workshops in exhibition displays facilities will be offered to the students of Fisk University and museum personnel from the regional museums.

(2) *Conservation and Preservation Techniques*.—Three workshops will be held on conservation and preservation techniques with special emphasis on materials reflecting Afro-American culture. The students will learn to prepare museum specimens for exhibition and study purposes. Fisk University is a repository of one of the largest Afro-American collections in America.

NATIONAL MUSEUM ACT/AMERICAN ASSOCIATION OF MUSEUM DAY AT THE
REGIONAL MUSEUM CONFERENCES

AMERICAN ASSOCIATION OF MUSEUMS, WASHINGTON, D.C.

\$19,700

The American Association of Museums believes that its six regional conferences would provide a substantial national benefit if they could continue to receive financial assistance for the purpose of communicating knowledge and ideas about museum techniques to museum personnel within their respective regions. These meetings will provide an excellent opportunity for museum administrators and professionals to confer and exchange ideas that can improve the services and benefits their museums offer the public.

The Association recommends that the topic of this year's program be on fund raising and fiscal management.

MUSEUM APPRENTICE PROGRAM, MAINE STATE MUSEUM, AUGUSTA, MAINE

\$7,300

The Museum Apprentice Program was initiated to assure the future availability of trained museum technicians. These non-academically trained personnel are the skilled craftsmen who keep the museum operating through ingenuity and innate skills. Most of these people have been self-trained through years of on-the-job training. However, to continue to rely solely upon this method of training would hardly be realistic considering the variety of skills represented and the needs for such personnel.

THE DEVELOPMENT OF AN INTERNATIONAL EXCHANGE PROGRAM FOR
MUSEUM PROFESSIONALS

AMERICAN ASSOCIATION OF MUSEUMS, WASHINGTON, D.C.

\$18,125

At the meeting of the United States National Committee of the International Council of Museums in June, 1971, and again at the triennial meeting of the International Council of Museums in August, 1971, it was recommended that the American Association of Museums develop programs of international exchange for foreign museum professionals to visit the United States and for Americans to visit abroad. The following list of suggestions were made regarding the various types of foreign exchange programs that the AAM could sponsor:

- (1) In-Service Training for Museum Professionals.
- (2) Museum Apprenticeships.
- (3) 30 Day Tours.
- (4) Specialized Seminars.

INTERNSHIP PROGRAM IN CONSERVATION

COOPERSTOWN GRADUATE PROGRAM, NEW YORK STATE HISTORICAL ASSOCIATION,
COOPERSTOWN, NEW YORK

\$23,000

The initial entering class of ten students of the Cooperstown Graduate Program for training conservators is in the last semester of its second year. The third year consists of an internship in a museum under the supervision of a master conservator practicing in the trainee's chosen field of specialization. This is the final portion of the training program and is required for the M.A. degree. This proposal requests partial support of the internship program.

NOTATIONS OF MATCHING/PARTIAL FUNDING OF GRANTS—NATIONAL MUSEUM ACT

Grants approved:

A program of consultant services to small history museums:	
American Association for State and Local History: NMA plus individual museums who receive service defray ½ half of consultant's expenses-----	\$27, 170
Seminar at Williamsburg for historical administrators:	
Colonial Williamsburg, Va.:	
NMA -----	10, 500
National Endowment for Humanities-----	10, 000
20 summer work projects in conservation (Cooperstown graduate program):	
NMA -----	12, 750
New York State Council on the Arts-----	12, 750

Grants recommended but not approved to date:

Support for museums studies program—University of Delaware:	
NMA -----	15, 750
Other -----	9, 250
Curator, a journal for the museum profession American Museum of Natural History, New York, N.Y.:	
NMA -----	8, 300
Other -----	5, 850
Internship support in conservation—Cooperstown graduate programs:	
NMA -----	23, 000
Individual museums where intern is located-----	27, 000

MATCHING PROGRAM

Dr. BROOKS. We don't have a formal matching program. However we have on several cases encouraged recipients to seek funds elsewhere and require that they indicate where else they are applying or have received funds. I would say about six of them are on a matching basis.

Senator BIBLE. Is it your policy to assist a State museum?

Dr. BROOKS. We gave a grant to the Kansas State Museum, for example, to set up a mobile training program.

Senator BIBLE. Do you do that on a matching basis? You say to the State of Kansas you put up a dollar for putting this up and we will match you dollar for dollar, is that how you do it?

Dr. BROOKS. That is typical of the way we do it, Mr. Chairman, but in that particular case the grant is not on a matching basis.

Senator BIBLE. Supply for the record the various State museums you have assisted over the past 5 years and the matching basis on which you helped each of them. Can you do that for the record?

Dr. BROOKS. Yes, sir.

(The information follows:)

The only financial assistance to State Museums during the past 5 years are the following two pending grants under the National Museum Act. These are not on a matching basis.

Kansas State Historical Museum, Topeka, Kans-----	\$30, 000
Maine State Museum, Augusta, Maine-----	7, 300

KANSAS STATE GRANT

Senator BIBLE. Five years is a long enough period of time to take a look at how this activity is carried on. Everyone wants to get extra dollars and the States are not different than the Federal Government.

They look to you for some dollars and you like to get dollars that you can match. Then, I guess they do the same thing—do you have county museums, as well?

Dr. BROOKS. The Kansas State grant will benefit county museums in the way of helping to train their curators. We are not giving direct grants under this year's appropriation to county museums.

Senator BIBLE. Have you ever?

Dr. BROOKS. I will furnish that for the record.

Senator BIBLE. Please supply that for the record. I would think you would operate through the State museum, and whether they give a part of their money that they get from you to the county, I suppose would be their business. But supply that for the record, take a 10-year look at it.

(The information follows:)

The only grant to a county museum occurred in fiscal year 1967 (prior to funding for the National Museum Act) when the Smithsonian provided \$18,000 to the Los Angeles County Museum of Natural History for the support of three internships.

MUSEUM PROGRAM FUNDING

Senator BIBLE. How long have you been doing this?

Dr. BROOKS. Under the funding of the National Museum Act, sir, it has been for 1 year. This is the first year we have received funding under that act. However, as has been pointed out, Smithsonian has been expending funds on the order of \$50,000 each year for the past 5 years under the purpose of the National Museum Act.

Senator BIBLE. Well, supply that for the 5 years. All I want is the history of what you have done in your assistance to museums in the period of the last 5 years.

(The information follows:)

PROJECTS FUNDED BY THE SMITHSONIAN INSTITUTION
RELATING TO THE PURPOSES OF THE
NATIONAL MUSEUM ACT
(FY 1967-1971)

1967

<u>Grantee</u>	<u>Purpose</u>	<u>Amount</u>
L. McKinley	Report on Symposium on Korean National Museum	\$ 561
Arkansas Arts Center	Support of Seminar on Role of Regional Museum	2,500
American Association of Museums	Publication of Manual on Museum Registration	5,000
Chicago Field Museum of Natural History	Support of training program: 3 museum internships	18,000
New York American Museum of Natural History	Support of training program: 3 museum internships	18,000
Los Angeles Museum of Natural History	Support of training program: 3 museum internships	18,000
International Council of Museums	For report on ethnological museums	700
H. Plenderleith, (Rome Centre)	For report on conservation center at Honolulu	250
Rome Centre	Support of Seminar on International Center for Preservation of Cultural Property at Rome	1,672
	Total	<u>\$64,683</u>

1968

J. Hirschmann (OAS - Pan Ameri- can Union)	For report on evaluation of science museums	\$ 350
H. Plenderleith (Rome Centre)	For report on deterioration of marble	125

1968 (continued)

<u>Grantee</u>	<u>Purpose</u>	<u>Amount</u>
Korean National Museum	Support of development of Korean National Science Cultural Center	\$ 7,200
National Foundation on Arts & Humanities	Support of Conference on Museum Needs of U. S. (Belmont)	2,800
	Total	<u>\$10,475</u>

1969

Norfolk Museum of Arts & Sciences	Support for Museum Seminar: Southeast Museum Conference	1,980
American Association of Museums	Support for feasibility study of museum procedures	10,000
B. Bearzi	Lecture on Ancient Metal	100
Korean National Science Cultural Center	Support of development of Korean National Science Cultural Center	7,200
American Association of Museums	Support of ICOM-US activities	18,000
American Association of Museums	Support of Regional Conference	15,000
	Total	<u>\$52,280</u>

1970

Metropolitan Museum of Art	For support of International Institute of Conservation--Seminar on preservation of wood	875
Oakland Museum	Exhibit planning & consultation	1,544
Museum Planning, Inc.	To conduct survey of National Museum of Natural History exhibits	12,500
American Association of Museums	To conduct feasibility study of museum standards	4,000
American Association of Museums	For support of Regional Conferences	15,000

1970

<u>Grantee</u>	<u>Purpose</u>	<u>Amount</u>
Korean National Museum	Support of development of Korean National Science Cultural Center	\$ 2,4000
	Total	<u>\$36,319</u>

1971

International Institute for Conservation	To support seminar on conservation	5,000
American Association of Museums	To publish report on finances of American museums	5,000
American Association of Museums	Analyzation of Accreditation Questionnaires	5,000
American Association of Museums	To support ICOM-US activities in the United States	25,000
	Total	<u>\$40,000</u>

Private Funds

International Council of Museums	Publication of manual <u>The Training of Museum Personnel</u> (Published in 1970; agreement made in 1966)	\$ 3,860
	Total Federal Funding	\$232,161
	Total Private Funding	3,860
	Total	<u>\$236,021</u>

Senator BIBLE. Can you tell me what the total amount of Federal financial assistance to museums has been for the latest fiscal year available; and how much is expected to be provided for this purpose in the 1973 fiscal year?

Dr. RIPLEY. I will be pleased to furnish that for the record, Mr. Chairman.

Senator BIBLE. All right.

(The information follows:)

FEDERAL FINANCIAL ASSISTANCE TO MUSEUMS

	Fiscal year (estimated)—	
	1972	1973
Smithsonian Institution.....	\$600,000	\$1,000,000
National Endowment for the Arts.....	3,900,000	4,500,000
National Endowment for the Humanities.....	519,000	1,150,000
National Science Foundation.....	951,000	951,000
Total.....	5,970,000	7,601,000

ACADEMIC AND EDUCATIONAL PROGRAM

Senator BIBLE. In connection with the academic and educational program, tell me how many persons are employed specifically for your tour programs, and to which of the museums are they assigned?

Mr. WARNER. In this program there is a base of 22 positions in 1972; of which we have 17 positions, not currently all filled, connected with the tour program.

Senator BIBLE. How many positions are filled?

Mr. WARNER. We have 11 on board, one of whom is part time.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE MEETING

Senator BIBLE. How do you propose to use the \$20,000 requested for the support of the American Association for the Advancement of Science meeting, and is this the total amount to be made available for this purpose. Is the question clear?

Mr. WARNER. No, sir.

Senator BIBLE. How do you propose to use the \$20,000 requested for support of the American Association for the Advancement of Science meeting?

First, you had better tell me what it is. A convention you are having here in Washington?

Dr. RIPLEY. The American Association for the Advancement of Science is having its last Christmas meeting in Washington in December 1972. I am the general chairman of this meeting. As part of the Smithsonian's activity in putting on exhibitions, special discussions, and seminars, and events for this meeting, we are requesting general support for this convention this year to the amount of \$20,000, Mr. Chairman.

Senator BIBLE. Is that the total amount?

Dr. RIPLEY. Yes, that is for this year only, a one-shot deal.

GENERAL PROGRAM SUPPORT

Senator BIBLE. How much of the \$18,000 increase which you ask for general program support will be made available for the special foreign currency programs, and why is this support not made available through the Office of International Activities?

That can be supplied for the record.

(The information follows:)

An increase of \$18,000 of general program support funds is requested in the FY 1973 appropriation for the Office of the Secretary. The Office of the Secretary is composed of the immediate Office of the Secretary, and the Offices of the Under Secretary, Assistant Secretary (Science), Assistant Secretary (History and Art), Assistant Secretary (Public Service), and Audits. This Office is responsible for the overall management, program planning, administration, and direction of some 45 museums, galleries, research laboratories, special Institution-wide programs, and technical support units plus a variety of construction and building renovation projects. Only about \$40,000 is now in the base to fund the out-of-pocket costs of this broad responsibility for travel, office supplies and equipment, and contractual services, including the performance of special reviews and studies that may be required to assist Smithsonian management fulfill its responsibilities. The requested additional \$18,000 simply reflects the increased costs of travel, supplies, equipment, services, and other items and the requirement of additional funds for such purposes as the Institution grows. The Special Foreign Currency Program was cited in the budget justification, along with certain other programs, simply to illustrate the breadth and diversity of Smithsonian activities for which the Office of the Secretary has responsibility.

FACILITIES AT THE HIRSHHORN MUSEUM

Senator BIBLE. What physical facilities will be available at the Hirshhorn Museum? I think you pretty well answered that, you said it will be fully operational in the fall of 1973.

Mr. BRADLEY. Yes, sir.

Senator BIBLE. And you justified the rest of it.

How have services for the Cooper-Hewitt Museum been provided before this year.

Dr. RIPLEY. The Cooper-Hewitt Museum is preparing to move into the Carnegie Mansion with funds we obtained privately. Under the general rubric of my position under the United States Code, I am charged with being the keeper of museums and their objects. In order to discharge this responsibility I feel we need a small custodial force and maintenance force for the maintenance of this museum. This is new and this is the first time we have requested these funds.

Senator BIBLE. Where is the Cooper-Hewitt Museum?

Dr. RIPLEY. In New York.

SPACE RENTAL

Senator BIBLE. I note a request for \$190,000 for space rental. Is this the total sum available to you for this purpose in the coming fiscal year?

Dr. RIPLEY. Yes; Mr. Chairman.

Senator BIBLE. Where will the rental space be located and which of your agencies will be housed in it?

Dr. RIPLEY. Space is available now for leasing in L'Enfant Plaza, 500 yards directly south of the Smithsonian Building at 10th and Jefferson. This location would permit housing a grouping of our business offices close enough to the mall to continue to provide efficient service to our main offices, museums and galleries all of which are seriously overcrowded. Included in the grouping would be fiscal and accounting, supply administration, audit, contracts and other closely related management support functions.

MUSEUM PROGRAMS AND RELATED RESEARCH

Senator BIBLE. For fiscal year 1973 you propose an appropriation of \$6 million for the special foreign currency program, an increase of \$2,500,000 over the appropriation for the current fiscal year. The justification for this request will be printed in the record.

(The justification follows:)

MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

1971 Appropriation	\$2, 500, 000	
1972 Appropriation	\$3, 500, 000	Equivalent in "Excess"
1973 Estimate	\$6, 000, 000	Foreign Currencies

An appropriation of \$6, 000, 000 in foreign currencies determined by the Treasury Department to be in "excess" to the normal needs of the United States abroad is requested for Fiscal Year 1973. The appropriation will be used to continue a program of grants to United States institutions for field research in those countries where "excess" local currencies which have accumulated are available. The research will be performed in areas of Smithsonian Institution interest and competence according to the following general program areas:

Commitment of Funds by Program Area

	<u>FY 1966 - 71</u> <u>Cumulative</u> <u>Commitments</u>	<u>FY 1972</u> <u>Estimated</u> <u>Commitments</u>	<u>FY 1973</u> <u>Appropriation</u> <u>Request</u>
Archeology and Related Disciplines	\$ 7, 563, 357	\$ 1, 823, 575	\$ 2, 220, 807
Systematic and En- vironmental Biology	4, 905, 044	1, 399, 940	2, 993, 090
Astrophysics and Earth Sciences	727, 391	192, 485	497, 103
Museum Programs	153, 500	60, 000	265, 000
Grant Administration	61, 690	24, 000	24, 000
	\$13, 410, 982	\$3, 500, 000	\$6, 000, 000

For the past two years, grants awarded to American institutions by the Program have been exceeding the annual appropriation. In FY 1970 there were program obligations of \$2, 922, 681 equivalent in "excess" foreign currencies against an appropriation of \$2, 316, 000; in FY 1971, obligations of \$3, 100, 365 against an appropriation of \$2, 500, 000. These commitments absorbed all "carry over" from previous years, and, by the end of FY 1970, and during the first half of FY 1971 some approved research had to be delayed and rescheduled in order to be funded.

Grants have benefitted or will benefit more than 200 institutions of higher learning in thirty-two states. Benefits include the participation

of pre- and post-doctoral research scholars, and the acquisition of unique study collections which benefit not only grantees but numerous additional specialized collaborating institutions in the United States.

The FY 1972 increased appropriation of \$3,500,000 should enable the program to meet its commitments during the current fiscal year. However, the development and expansion of regular programs, as well as the opening up of important new research possibilities, especially in India and Poland, have resulted in a rising demand for "excess" research monies which makes an increased appropriation in FY 1973 necessary.

A joint Indo-American Ecology Symposium held in February 1971, resulted in plans for a major program of "environmental assessment" studies to be carried out jointly by Indian and American scientists and institutions; the basic scientific data expected to be developed by this program will not only contribute to the solution of environmental problems in developing India but will add vital data on the environment of use to American scientists and institutions working on U.S. environmental problems.

Similarly, a high-level visit in the spring of 1971 by the Chairman of the Polish Committee for Science and Technology has opened important new possibilities for joint American-Polish research by which American scientists and institutions can take advantage of highly sophisticated Polish facilities and experience without the expenditure of hard research dollars to perform comparable research in this country.

These major new opportunities for research follow similar opportunities in Yugoslavia and Pakistan described in last year's appropriation request. The projection for continued collaboration between basic research institutions in fields of Smithsonian interest in all of these countries is expected to remain high for as long as "excess" currencies are available in spite of varying political factors at the national level. At the same time, the American institutions performing research in Israel under Smithsonian sponsorship are now phasing out the major effort, with many accomplishments which the Program has financed there in the past six years; Israel is expected to be removed from the Treasury's "excess" currency list on June 30, 1972; consequently, FY 1972 will be the last year in which the Program will commit funds there, but the funds formerly committed to Israel will be more than absorbed by the new opportunities opening up elsewhere.

In addition to the need for an increase brought about by these new opportunities, the increase in FY 1973 is essential to support continuing field studies in the Smithsonian's traditional disciplines of systematic and environmental biology and anthropology which today are recognized

as basic to an understanding of the problems of environmental quality and cultural change.

The increase is essential also to ensure support for new and on-going research which contributes to United States national programs under, for example, the International Biological Program, the International Decade of Ocean Exploration, the National Aeronautics and Space Administration, the National Academy of Sciences, the United States National Museum and the Department of Interior's cooperative programs abroad under the Endangered Species Conservation Act.

Finally, the increase is essential to permit, in some cases, multi-year obligation of funds for research in those "excess" currency countries, like Tunisia and Morocco, where the excess designation by the Treasury Department is subject to termination at any time because "excess" accounts are small. Failure to obligate funds for a reasonable number of years for projects in such countries could prematurely terminate worthy studies by United States institutions without receiving full value from funds already expended. The Smithsonian appropriation has never been adequate to permit obligation of funds for more than one year of research at a time. Ceylon, where multi-year research has been underway, was removed from the "excess" currency country list at the end of fiscal year 1970. The Institution was only able to provide for orderly completion of the research going on there by making multi-year obligations against monies originally committed for research in other countries. The Program will of course, continue to require annual Advisory Council review to determine satisfactory research progress of these and other multi-year studies prior to authorizing disbursement of each successive year's funds.

USE OF FOREIGN CURRENCIES SAVES HARD DOLLARS

Special Foreign Currency Program appropriations are an advantageous source of research monies. This is so because they are not new appropriations of tax dollars and because delay in the use of the "excess" accounts means continuing losses to the United States Treasury as these accounts lose value through inflation and devaluation. Moreover, these appropriations do not add significantly to the President's budget total because the Commodity Credit Corporation reduces its appropriation request by an amount equal to the amount of foreign currencies expended.

At the same time, Special Foreign Currency Program appropriations contribute to essential national research objectives abroad without contributing to a balance of payments deficit. Moreover, Smithsonian Foreign Currency grants frequently serve as dollar-saving supplements to the dollar grants of both public and private agencies like the National Endowment for the Humanities, the National Science Foundation, the National Institutes of Health, the National Aeronautics and Space Administration, the World Wildlife Fund, the National Geographic Society, the John D. Rockefeller III Fund and the Wenner-Gren Foundation. In such cases, the foreign currency grants cover costs in the host country; the dollar grants are expended in the United States for equipment not available in "excess" currency countries, for American salaries, laboratory fees and the like.

OUTSTANDING ACHIEVEMENTS OF RESEARCH SUPPORTED BY SMITHSONIAN FOREIGN CURRENCY GRANTS

The following are examples of some of the outstanding results achieved by American scientists and institutions working under grants from the Program:

1. Smithsonian - Yale Arborvirus Laboratory collaboration has demonstrated that contrary to previous scientific opinion, migrating birds can transport infective viruses between continents. Some of these viruses, which can also cause fevers in man, are very serious health problems in temperate zones. Such fevers as West Nile, Kemerovo and Sindbis have been identified in migrating birds captured by Smithsonian field teams in Egypt.

2. Yale University students of fossil remains of man's earliest ancestors have found the skull and jaws of the common ancestor of all higher primates, including apes and man. This creature lived about 28,000,000 years ago. This discovery is considered the most important find in the last fifty years, bearing on man's evolution and on that of the apes.

3. The Smithsonian Astrophysical Observatory has, in collaboration with Tel Aviv University in Israel, successfully demonstrated that the basic principles and techniques emerging from the study of atomic particles are also applicable to the heretofore unexplained motions of groups of stars and of galaxies, opening important new fields for study of man's universe.

4. The Hebrew Union College, Cincinnati, Ohio excavation at Gezer, Israel serves as a principal field training ground for American biblical scholars and archeologists. This city was given by Pharaoh Shishak as a dowry to his daughter who became King Solomon's queen. These excavations have furnished conclusive proof of the city's destruction by Nebuchadnezzar.

5. Smithsonian studies in collaboration with Hebrew University in Jerusalem of the movement of marine life through the man-made, sea-level Suez Canal show that the majority of commercially valuable fish taken in the Eastern Mediterranean originated in Red Sea. These studies have saved the United States thousands of hard research dollars because one result is a tested model for studies being prepared by the National Academy of Sciences in connection with a possible sea-level canal at Panama. Taken together with studies of the movement of marine-life, particularly predators, through the Erie and Welland Canals into Lake Erie, the Suez Canal studies provide dramatic evidence of the consequences of man's modification of his environment.
6. The University of Pennsylvania museum, by applying modern computer methods to the scattered stones of the Egyptian Temple of Akhnaten, dismantled in antiquity, has reconstructed for modern eyes the facade of this historic temple. This project has been given extensive publicity by publications such as Life, the National Geographic, the New York Times, and the Washington Star, and a definitive book on the project will soon be published.

LIST OF PROJECTS

As in past years, a list of the illustrative projects of American institutions in many states being supported by the Special Foreign Currency Program, being developed in anticipation of such support, or considered worthy of being developed, has been prepared in support of this FY-73 appropriation request. In addition to the information usually included about each project--grantee institution, project title, amount of "excess" funds committed or to be committed to the project--a more extended explanation of what each project entails has been included this year. Owing to the increased length of the resulting document, this list of projects is being submitted separately as supplement to the Budget Justifications for Fiscal Year 1973.

This list of illustrative projects represents the Institution's selection of possible projects which appear most promising for successful development and implementation during Fiscal Year 1973. It should be noted, however, that actual implementation of these projects, and the distribution among disciplines and countries of "excess" currencies appropriated will be contingent upon review and approval on competitive scientific merit by the Smithsonian's national scientific advisory councils; review and approval as not contrary to U.S. national interest by the Department of State and U.S. embassies abroad; review and approval of each project by the appropriate agency of the host country; and conclusion, where required, of a satisfactory agreement between the American grantee of the Smithsonian and an appropriate collaborating institution in the host country.

SUMMARY OF PROGRAM
COMMITMENTS BY COUNTRY

Country	FY-1971 Actual	FY-1972 Estimate	FY-1973 Estimate
Burma	\$ 1,000	\$ 2,000	\$ 5,000
Egypt	388,253	420,000	780,000
Guinea	--	--	10,000
India	885,340	1,085,000	2,278,000
Israel	856,736	665,000	--
Morocco	100,521	105,000	180,000
Pakistan	88,861	103,000	232,000
Poland	76,859	140,000	425,000
Tunisia	114,615	385,000	960,000
Yugoslavia	348,253	595,000	1,130,000
	<u>\$2,860,438</u>	<u>\$3,500,000</u>	<u>\$6,000,000</u>

SUMMARY OF PROGRAM
COMMITMENTS BY DISCIPLINE

	FY-1971 Actual	FY-1972 Estimate	FY-1973 Estimate
Archeology and Related Disciplines	\$1,702,593	\$1,823,575	\$2,220,807
Systematic and Environmental Biology	927,597	1,399,940	2,993,090
Astrophysics and Earth Sciences ...	216,574	192,485	497,103
Museum Programs .	3,554	60,000	265,000
Grant Administration	10,120	24,000	24,000
	<u>\$2,860,438</u>	<u>\$3,500,000</u>	<u>\$6,000,000</u>

LIST OF PROJECTS

A. ARCHEOLOGY AND RELATED DISCIPLINES1. BURMAa. On-Going and Pending Archeology Projects in Burma

<u>1. Institution</u>	<u>Title of Project</u>
University of Hawaii, Honolulu, Hawaii	"The Late Pleistocene and Early Holocene Prehistoric Culture of the Dry Zone of the Irrawaddy River Valley, Burma."

This developmental work for a study of the material culture of the peoples who inhabited what is today Burma in the middle and new "stone age" is proposed by the same American scholar who has recently demonstrated that Southeast Asia may be a "cradle of civilization" to vie with Mesopotamia. The project is particularly important in that it would constitute a "first" in cooperation between an American university and the Ministry of Union Culture in Rangoon.

<u>U. S. Dollar Equivalent in Burmese Kyats</u>	FY 1973 est.	5,000
	FY 1972 est.	2,000
	FY 1971	1,000

II. EGYPTa. On-Going and Pending Archeology Projects in Egypt

<u>2. Institution</u>	<u>Title of Project</u>
American Research Center in Egypt Princeton, New Jersey	"Research Activities of the American Research Center in Egypt (ARCE)."

The Center, a consortium of 15 U. S. universities and museums, serves as an indispensable liaison with the Government of Egypt for all American scholars attempting to work in the country. The research projects of practically all the Americans working in Egypt are carried out, directly or indirectly, under its auspices. In the absence of official diplomatic relations between Egypt and the United States the Center continues to maintain an American cultural presence in the country which is much appreciated especially by those Egyptians who still look to America and the West. ARCE projects active in FY-71 include excavations at the pharaonic site at Memphis and the Islamic site at Fustat, the continuing work of the University of Chicago's Epigraphic Survey at Luxor, studies of the Temple of Osiris and of Old Kingdom mummies. In addition, excavations at near the Saqqara "step pyramid" and the great pyramid of Cheops near Giza are projected for Fiscal Years 1972 and 1973.

<u>U. S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973 est.	200,000
	FY 1972 est.	116,257
	FY 1971	189,214
	FY 1970	25,955
	FY 1969	109,415
	FY 1968	202,071
	FY 1967	176,777
	FY 1966	259,200

<u>3. Institution</u>	<u>Title of Project</u>
University Museum	"The Akhnaten Temple Project."
University of Pennsylvania	
Philadelphia, Pennsylvania	

This project has been written up in Life, the National Geographic Magazine and other magazines and newspapers. It involves the reconstruction by computer methods of the facade of a temple which was destroyed in antiquity and of which only the scattered stones remained. By coding information on individual stones computer technology allowed photographs of the stones to be rematched so that the appearance of this famous temple is visible to human eyes for the first time since antiquity. A complete book about this project will soon be published. Remaining costs are for phase-out of the project and preparation of the publication.

<u>U. S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973	--
	FY 1972 est.	50,000
	FY 1971	66,150
	FY 1970	67,000
	FY 1969	60,000
	FY 1968	9,730
	FY 1967	65,070

<u>4. Institution</u>	<u>Title of Project</u>
University Museum	"The Dra Abu El Naga Project"
University of Pennsylvania	
Philadelphia, Pennsylvania	

The study of tomb at Dra Abu El Naga inscriptions was begun over fifty years ago by American scholars working in Egypt, but was unable to be carried to completion. The intention of the University Museum is to complete the work and publish the results at long last. When it is completed, the tombs will probably be opened to tourists and other interested viewers.

<u>U. S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973 est.	25,000
	FY 1972 est.	25,000
	FY 1971	26,475
	FY 1970	17,000
	FY 1969	17,300
	FY 1968	9,750

5. InstitutionTitle of Project

Smithsonian Astrophysical Observatory
Cambridge, Massachusetts

"The Stellar Alignment of the
Egyptian Temples at Karnak"

The same astronomer who demonstrated that the massive megaliths at Stonehenge in England were erected by a prehistoric people who nevertheless demonstrated a considerable and surprising knowledge of astronomy believes that the ancient Egyptians too lined up the temples they built with the sun and the stars. This view has often been put forward as a theory, but nobody has ever adequately tested it, primarily because astronomers have little knowledge of archeology and archeologists have little knowledge of astronomy. In this project an astronomer proposes to team up with an Egyptologist and try to answer the question of the heavenly orientation of the massive Egyptian temples at Karnak once and for all.

U.S. Dollar Equivalent in Egyptian Pounds

FY 1973 est.	5,000
FY 1972 est.	3,000
FY 1971	1,000

6. InstitutionTitle of Project

American University in Cairo
Cairo, Egypt and New York, N. Y.

"Four Old Kingdom Mastabas in
the Great Western Cemetery of
the Giza Necropolis."

This project will bring to completion a project begun by an American expedition nearly fifty years ago but never completed. It will bring recent, interdisciplinary methods to the comprehensive study of the tombs of some three generations of the same family in Old Kingdom Egypt, thus throwing definitive light upon the important question of the life and culture of the people in this most fascinating period of ancient history. The project will be a cooperative effort with Egyptian scholars and will constitute an important training ground for a new generation of American Egyptologists.

U.S. Dollar Equivalent in Egyptian Pounds

FY 1973 est.	45,000
FY 1972 est.	45,000

7. InstitutionTitle of Project

University Museum
University of Pennsylvania

"Excavation within the Town and
Harbor Site of Malkata, Western
Thebes."

This project proposes excavation of selected areas within the palace town of King Amenhotep III (1417-1379 B. C.), and will concentrate upon the harbor of the town, showing in detail how the civilization of ancient Egypt depended upon the Nile to hold itself together. The important period involved is the New Kingdom period in ancient Egyptian history (ca. 1570-730 B. C.).

U.S. Dollar Equivalent in Egyptian Pounds

FY 1973 est.	30,000
FY 1972	26,893
FY 1971	28,094

8. InstitutionTitle of Project

University of Michigan
Ann Arbor, Michigan

"Art and Technology of Graeco-Roman Lamps in Ancient Egypt,"

Although the people of Egypt are related to the Semitic peoples who live around them the country was for centuries a center of Greek culture and was famous as the "granary" of the Roman Empire. One of the aims of this study is to fit this period of Egyptian history into the wider context of Graeco-Roman Mediterranean civilization in which American scholars have been pre-eminent for generations. A major gap in our knowledge of these times can be filled by this relatively modest study.

U.S. Dollar Equivalent in Egyptian Pounds

FY 1973 est. 2,000

FY 1972 est. 2,000

9. InstitutionTitle of Project

Brooklyn Museum
Brooklyn, New York

"Scale Models of Egyptian Monuments"

The construction of scale models in Egypt of major Egyptian temples is related to the programs of study and research in the Brooklyn museum. The models contemplated include the Pavilion of King Sesostris I at Karnak and the Giza Cemeteries adjoining the Pyramids near Cairo. These models will be available in Brooklyn for study by scholars and also for the public educational projects of the Brooklyn Museum.

U.S. Dollar Equivalent in Egyptian Pounds

FY 1971

8,756

b. New Archeology Projects in Egypt

10. InstitutionTitle of Project

National Museum of Natural
History, Smithsonian Institution,
Washington, D. C.

"Infectious Diseases in Ancient
Egyptian Populations."

Primarily through studies of mummies, but also through studies of human remains preserved in burial jars, this investigation is applying the techniques of physical anthropology and medicine to the study of the origin and spread of infectious diseases in antiquity. Disease germs too have undergone an "evolution," and this study will tell us a great deal about the problem of infectious disease and epidemiology today. The Principal Investigator is qualified both as an anthropologist and a doctor of medicine.

U.S. Dollar Equivalent in Egyptian Pounds

FY 1973 est. 50,000

11. InstitutionTitle of Project

University of Texas at
Arlington, Arlington,
Texas

"Predynastic Museum Research
in Egypt."

This study is an exploratory study of materials existing in Egyptian museums which predate the founding of civilization in Egypt. Through this study the Principal Investigator hopes to identify the location of sites which can be excavated to throw light on how civilization developed in Egypt out of prehistoric beginnings now lost to our knowledge.

U.S. Dollar Equivalent in Egyptian Pounds FY 1973 1,607

<u>12. Institution</u>	<u>Title of Project</u>
Center for the Study of Man Smithsonian Institution Washington, D. C.	"Conference on African Anthropology."

Through contacts between international scholars specializing in the study of the traditional and contemporary study of culture in rapidly changing and developing Africa, this conference aims to bring together in the form of publishable proceedings what has been learned to date in this field; and to chart the course of further scholarly study which will contribute to the solution of the problems of modernization in the African continent.

U. S. Dollar Equivalent in Egyptian Pounds FY 1973 est. 50,000

III. INDIA

a. On-Going and Pending Archeology Projects in India

<u>13. Institution</u>	<u>Title of Project</u>
American Institute of Indian Studies, Philadelphia, Pennsylvania. (A consortium of 24 U.S. universities and colleges)	"Support for the Center for Art and Archeology."

Of all the civilizations of the world India's is the least known. The Center aims to document and photograph key parts of India's vast art treasures in an effort to determine even what is there. The results of this inventory are of great benefit and interest to the American scholars and institutions attempting to study the unique civilization of one of the most important countries in the world today. Hard dollar support to supplement the rupees being provided by the Smithsonian comes from the JDR III Fund.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	120,000
	FY 1972 est.	100,000
	FY 1971	121,012
	FY 1970	150,000
	FY 1969	139,230
	FY 1968	144,500
	FY 1967	130,750
	FY 1966	76,850

14. Institution

American Institute of Indian Studies, Philadelphia, Pennsylvania. (A consortium of 24 U.S. universities and colleges)

Title of Project

"Support for the AIIS Center in Poona, India, and for Research Fellowships for American Scholars Working in India."

It would be virtually impossible for any American attempting to perform research in the social sciences and humanities in India to attempt to do so without the facilities provided by the Center--they would not be able to get housing, visas, transportation, permits to work, and so on, without the support of the Center. Since the Center enjoys the highest reputation with the Government of India, the increasing number of Americans who are turning their attention to the study of this vast subcontinent are the beneficiaries of the indispensable services rendered by the Center.

U. S. Dollar Equivalent in Indian Rupees

FY 1973 est.	250,000
FY 1972 est.	200,000
FY 1971	478,660
FY 1970	133,920
FY 1969	147,930

15. Institution

University of Michigan
Ann Arbor, Michigan

Title of Project

"Photographic Documentation of Painting and Sculpture During India's Golden Age from the Fifth to Eighth Centuries, A.D."

Although Indian art commands a higher and higher price on the commercial market today, almost nothing is really known in this country about the rich Indian tradition. The University of Michigan is taking the lead in locating, photographing, and studying important works of art; other American institutions will also have access to the material documented for study purposes.

U. S. Dollar Equivalent in Indian Rupees

FY 1973 est.	5,000
FY 1972 est.	5,000
FY 1971	3,500

16. Institution

University of Hawaii,
Honolulu, Hawaii

Title of Project

"To Initiate Excavations in Northern India in Conjunction with the Archeological Survey of India."

The nature of early man's culture in Northern India is almost completely unknown and represents a considerable gap in our knowledge, especially when compared to what we know about early man in surrounding areas of South Asia such as the Indus Valley, Ceylon, Thailand. The University of Hawaii has gained considerable experience in working in Asia through

its well-known East-West Center, and would be able to apply techniques and compare materials based on its existing background in Asia and the Pacific.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	50,000
	FY 1971	2,500

17. <u>Institution</u>	<u>Title of Project</u>
Colgate University Hamilton, New York	"Raksha: Documentation on Film, Tape and through Anthropological Methods of India's Disappearing Traditional Performing Arts."

As is true of so many facets of traditional cultures faced with rapid modernization, India's extremely rich tradition of song and dance, both of the "folk" variety and of a highly sophisticated professional type, is in danger of dying out. This project aims both to preserve and document performing art forms still exemplified by living performers and to the extent possible encourage the continuation of these forms. It has been only in the past few years that the music and dance of India have gained some popularity in America through Indian films and performances. At precisely the moment these Indian performing arts are gaining new audiences they are in danger of disappearing.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	135,000
	FY 1972	135,000

18. <u>Institution</u>	<u>Title of Project</u>
University of Michigan Ann Arbor, Michigan	"Genetic Effects of Inbreeding on Indian Children."

Intermarriage within near degrees of consanguinity has long been known to have marked effects upon the genetic inheritance of the children of such unions. In many cases the children are born with genetic defects. This project thus represents a dimension of Anthropology which could have important implications for human health. The Principal Investigators conducted a classic genetic study at Hiroshima. The marriage habits of the particular subgroup they wish to study in India constitute almost an ideal control group for this study.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	34,200
	FY 1972	34,200

19. <u>Institution</u>	<u>Title of Project</u>
Vassar College, Poughkeepsie, New York, and American Museum of Natural History, New York, New York	"Compendium and Publication of All Indus Inscriptions in India."

This project aims to compile and publish all the inscriptions of from the ancient civilization of the Indus Valley. The script used by this civilization has never been deciphered. As was true with hieroglyphics, cuneiform, and other ancient writing systems, a compendium of existing inscriptions is necessary to enable scholars to proceed with the work of deciphering the script.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	33,000
	FY 1972	33,000

20. <u>Institution</u>	<u>Title of Project</u>
University of Nevada Reno, Nevada	"Excavation of the Prehistoric Site of Kausambi in Northern India."

As already noted (Item #14, above), Northern India represents an unknown territory on the map of human prehistory. The importance of filling the present gaps in our knowledge and of learning about the culture of early man in this area would be supplemented by the opportunity of applying in a new setting ecological methods and techniques developed by the University of Nevada Desert Research Institute in a comparable, but not identical, desert area in Nevada.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	82,500
	FY 1972 est.	82,500
	FY 1971	3,500

21. <u>Institution</u>	<u>Title of Project</u>
National Museum of Natural History, Smithsonian Institution, Washington, D. C.	"Ethnographic Research on Tibetan Artifacts."

This project represented a unique one-time opportunity to acquire Tibetan cultural artifacts brought by Tibetan refugees to India which will be used for ethnographic study at the Museum of Natural History as well as for public museum display. The acquisition of these artifacts is particularly important in view of the rapid disappearance of traditional Tibetan culture since the country was taken over by China.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1971	10,181
---	---------	--------

b. New Archeology Projects in India

<u>22. Institution</u>	<u>Title of Project</u>
Association for Asian Studies Ann Arbor, Michigan	"Linguistic Research in India."

The modern science of linguistics in America has led the world in the variety and sophistication of its techniques. The study of man's culture through his language can nowhere be more fruitfully studied than through analysis of man's languages. Techniques which are commonplace in this hemisphere, however, have yet to be widely applied in South Asia where it is proposed that this study be conducted.

U.S. Dollar Equivalent in Indian Rupees FY 1973 est. 28,300

<u>23. Institution</u>	<u>Title of Project</u>
National Museum of Natural History, Smithsonian Institution, Washington, D. C.	"Studies of the Rapidly Disappearing Crafts at the Village Level in India."

As urbanization and industrialization spread in India, crafts which have been passed down in families for generations may be lost. This project will attempt to carry out in India what on-going projects have already been doing in Pakistan and Ceylon; document, photograph and salvage what can be saved of these crafts before the techniques and materials involved are lost to the world through the deaths of the last artisans.

U.S. Dollar Equivalent in Indian Rupees FY 1973 est. 25,000

<u>24. Institution</u>	<u>Title of Project</u>
Temple University Philadelphia, Pennsylvania	"Upper Pleistocene and Holocene Ecology, and Archeology of Peninsular India in Contexts of Human Adaptations."

This project aims to reconstruct a picture of human settlements in pre-historic times in what is today East India. At present only sketchy details are available about the pattern of human occupation in this area. The results of the study will throw light upon the later development of civilization out of prehistoric culture. Expenses are to be shared with the Archeological Survey of India.

U.S. Dollar Equivalent in Indian Rupees FY 1973 est. 17,880

<u>25. Institution</u>	<u>Title of Project</u>
American Institute of Indian Studies Philadelphia, Pennsylvania	"Documentation of Ritual Art Forms as Communication Systems of Traditional Cultures."

This project involves the documentation on film and tape, as well as the translation of pertinent Sanscrit dramas, related to the traditional ritual art forms of India. It has long been recognized how important has been the role of these ritual art forms in the culture of India. Modern methods of study will not only yield important data relative to change and development in India but will serve to preserve these forms as one of the important human cultural expressions.

U. S. Dollar Equivalent in Indian Rupees FY 1973 est. 30,000

26. <u>Institution</u>	<u>Title of Project</u>
University of Michigan Ann Arbor, Michigan	"Tamil Inscription Project"

The inscriptional record of early and Medieval India is a rich treasure of documents as yet only partially available to scholarship. These documents are sources of information on political, social, cultural and economic history which complement the mainly religious literature of the period. The methods of anthropological linguistics applied to these inscriptions by American scholars are expected to yield new data for the understanding of India's place in the world.

U. S. Dollar Equivalent in Indian Rupees FY 1973 est. 24,780

27. <u>Institution</u>	<u>Title of Project</u>
St. Mary's College Notre Dame, Indiana	"The Culture of the Ishavas of Kerala, South India."

The Izhavas of Kerala, a low-cast Hindu community, nearly ten millions in number, who form one third of the population of the southern-most state of India, have been in the center of political and social ferment in India. A study of this group from the standpoint of cultural anthropology is expected to throw considerable light on the current behavior and motivations of the group and has many implications for the understanding of current unrest in India.

U. S. Dollar Equivalent in Indian Rupees FY 1973 est. 6,000

IV. ISRAEL

a. On-Going and Pending Archeology Projects in Israel

28. <u>Institution</u>	<u>Title of Project</u>
Hebrew Union College Cincinnati, Ohio	"Survey of Archeological Sites in the Negev Desert and Excavations at Tel Gezer."

This excavation is of major interest to all Americans engaged in the study of the Bible, since the reconstruction of the city's history by modern

archeological methods throws light on the narratives related in the Bible. Hundreds of divinity students of all denominations from dozens of American colleges and seminaries have been introduced to Biblical archeology at first hand through the Summer Institute connected with this site.

<u>U.S. Dollar Equivalent in Israeli Pounds</u>	FY 1972 est.	136,000
	FY 1971	300,400
	FY 1970	248,340
	FY 1969	68,500
	FY 1968	216,200
	FY 1967	300,000
	FY 1966	150,000

29. <u>Institution</u>	<u>Title of Project</u>
University of Missouri Columbia, Missouri	"Excavations at a Greek-Trading Site at Tel Anafa, Israel."

The expansion of Greek civilization in the ancient world following the conquests of Alexander the Great have been better understood as a result of this excavation. A number of American graduate students have been trained on this site under complementary grants from the Ford Foundation.

<u>U.S. Dollar Equivalent in Israeli Pounds</u>	FY 1972	36,000
	FY 1970	35,500
	FY 1969	40,000
	FY 1968	60,500

30. <u>Institution</u>	<u>Title of Project</u>
American Schools of Oriental Research Cambridge, Massachusetts	"Archeological Investigations of the American Schools of Oriental Research at Tel El Hesi, Khirbet Shema, and Other Sites."

Palestine is of major interest for students of the past not only for its importance in understanding the Bible but also because it was a crossroads of ancient civilizations. These excavations of the American Schools of Oriental Research help to fill in the total picture of the ancient orient on which several generations of American scholars have been working. Organized as a consortium, this institution has enabled small denominational colleges in the United States to participate in Biblical studies which they would be unable to conduct using their own limited resources.

<u>U.S. Dollar Equivalent in Israeli Pounds</u>	FY 1972 est.	140,000
	FY 1971	117,492
	FY 1970	166,713
	FY 1969	50,000
	FY 1968	80,000

31. InstitutionTitle of Projects

National Museum of Natural History	"Excavations at Tel Jemmeh,
Smithsonian Institution	Southern Israel. "
Washington, D. C.	

The site at Tell Jemmeh provides us with an understanding of how man adapted to the desert environment Southern Palestine over some 1200 years--in an area which is now being opened for resettlement for the first time in almost 2000 years. For the first time in Israel, new archeological methods are being applied on this site which will enable us to reconstruct the environment as well as the culture of the men who lived on the edge of the desert wilderness. Important knowledge of international trade in ancient times will be brought to light. The site includes Phoenician, Cypriot, Egyptian, and Arabian cultures from the Middle Bronze Age Through the Persian period.

<u>U.S. Dollar Equivalent in Israeli Pounds</u>	FY 1972 est.	90,000
	FY 1971	63,536
	FY 1970	63,272

32. InstitutionTitle of Project

University of Illinois	"Comparative Studies of the
Urbana, Illinois	Effects of Cultural Change
	On Folk Music in Israel. "

Israel provides a unique "melting pot" in which to study the cultures of the immigrants who came to Israel from a variety of countries and cultures. However, the traditions brought by these immigrants will disappear within a single generation. It is important that living traditions such as those being studied by this project be studied while they can be studied. These studies in Israel are being correlated with similar studies by University of Illinois scholars in Iran, Tunisia, and Turkey.

<u>U.S. Dollar Equivalent in Israeli Pounds</u>	FY 1972 est.	30,000
	FY 1971	19,860
	FY 1970	31,575

V. MOROCCOa. On-Going and Pending Archeology Projects in Morocco33. InstitutionTitle of Project

National Museum of Natural History	"To Excavate the Moroccan
Smithsonian Institution	Islamic City of Sijilmassa. "
Washington, D. C.	

This site has been called "the most important archeological site in North Africa". Situated on the edge of the Sahara it was an important center of the virtually unstudied yet flourishing trade with West Africa in the period before the European explorations of the African coast. The city

was the original seat of the present ruling dynasty of Morocco and the Moroccan Government has officially asked the Smithsonian to assist in development of an excavation of one of its richest historical sites. While United States relations with Morocco have traditionally been excellent, the cultural influence of the United States in that North African country has hardly been proportionate. This project would initiate a whole new era in American-Moroccan cultural cooperation.

<u>U. S. Dollar Equivalent in Moroccan Dirhams</u>	FY 1973 est. 150,000
	FY 1972 est. 75,000

b. New Projects in Morocco

34. <u>Institution</u>	<u>Title of Project</u>
New York University New York, New York	"The Social History of Urban Planning and Urbanization in Morocco."

Rapid urbanization--the movement to the cities is a worldwide phenomenon. The use of modern anthropological techniques to study this phenomenon as an aspect of culture may help a developing country such as Morocco avoid some of the mistakes which more developed countries have made in the process of urbanization.

<u>U. S. Dollar Equivalent in Moroccan Dirhams</u>	FY 1973 est. 10,000
	FY 1972 est. 4,822

VI. PAKISTAN

a. On-Going and Pending Archeology Projects in Pakistan

35. <u>Institution</u>	<u>Title of Project</u>
National Museum of Natural History Smithsonian Institution Washington, D. C.	"Disappearing Ancient Technologies of Pakistan."

With the spread of industrialization around the world crafts and techniques which have been carried on for millenia are in the process of disappearing in our lifetime. The aim of this project is to document and salvage what can be saved of these crafts and techniques--as well as the materials used, many of which can find uses even in the modern world. It is expected that a small scale crafts industry can be maintained as a result of this study which will not only provide saleable hand-made objects to tourists but will help Pakistan's difficult foreign exchange situation and employment situation by providing a saleable craft product.

<u>U. S. Dollar Equivalent in Pakistani Rupees</u>	FY 1973 est. 50,000
	FY 1972 est. 50,000
	FY 1971 51,533
	FY 1970 76,133

FY 1969	43,742
FY 1968	25,128
FY 1967	6,739

36. InstitutionTitle of Project

University of California
Los Angeles, California

"To Excavate Islamic Arche-
ological Sites in Pakistan."

Western archeologists working in South Asia have traditionally been most interested in pre-history. Since the Pakistanis are extremely proud of their Islamic heritage, this project would be considered a priority undertaking as one of the first major excavations of an Islamic site by a Western team. UCLA's famed Near Eastern Center would be ideally suited to perform this work.

U.S. Dollar Equivalent in Pakistani Rupees

FY 1973 est.	30,000
FY 1972 est.	30,000

VII. POLANDa. On-Going and Pending Archeology Projects in Poland37. InstitutionTitle of Project

State University of New York
Buffalo, New York
(Formerly a University of
Michigan project)

"The Earliest Neolithic
Settlements in Poland."

Much of what is known about early man has been uncovered on the continent of Europe, but the opportunities of American scholars to participate in this work has been limited by the extra funds required to work abroad and limited access to the best site. This is the only American excavation which has been allowed in Poland in recent years, and provides cultural links between Polish and American scholars which have been difficult to establish and maintain during the era of the Cold War.

U.S. Dollar Equivalent in Polish Zloties

FY 1973 est.	43,680
FY 1972 est.	43,680
FY 1971	43,516
FY 1969	37,251
FY 1968	36,107
FY 1967	21,684

38. InstitutionTitle of Project

University of Kentucky
Lexington, Kentucky

"A Metric and Morphological Study
of the Evolution of the Chin in
Polish Skeletal Populations
Between 2000 B. C. and 1800 A. D."

The existence in Polish museums of human skulls from resident populations over the very long period of 4000 years makes possible a study of the evolution over that period of an important human anatomical feature. The Principal Investigator is qualified both as a physical anthropologist and a doctor of dentistry.

<u>U. S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	1,860
	FY 1972 est.	1,860
	FY 1971	1,349

39. InstitutionTitle of Project

Washington State University
Pullman, Washington

"To Excavate a Prehistoric
Flint Mining Complex on the
Kamienna River in Poland."

This study proposes to bring to bear the skills of geologists, paleobotanists, archeologists and anthropologists to study the early technology of flint mining and flint artifact manufacture during the New Stone Age and at the beginning of the Iron Age. A study such as this provides information about the movement of peoples from place to place in Europe in very early times, and about the rise and fall of successive centers of culture.

<u>U. S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	25,000
--	--------------	--------

40. InstitutionTitle of Proposal

Washington State University
Pullman, Washington

"To Study Pre-Mesolithic Fossils
in Poland."

"Pre-Mesolithic" refers to the Middle Stone Age. The fossils in question are collections of human skeletons. No comprehensive study of the fragments of fossil remains of man and his primate ancestors has been undertaken. Measurements of whole skulls provide the basis for most of what is known of early man. The consequent sketchy picture of his evolution could be more fully painted if a system for the measurement and analysis of the many fossil fragments of early Stone Age man in the museums of Europe, and particularly of Poland, could be developed to employ computers to speed the analysis.

<u>U. S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	10,000
--	--------------	--------

VIII. TUNISIAa. On-Going and Pending Archeology Projects in Tunisia41. InstitutionTitle of Project

Dumbarton Oaks Center for
Byzantine Studies
Washington, D. C. and University of
Iowa, Iowa City, Iowa

"A Corpus of the Ancient Mosaics
of Tunisia."

The Tunisian mosaics are among the most distinctive of the mosaics which the ancient Romans left everywhere they lived. Some unique ones of the Christian period remain in Tunisia. These priceless treasures are being exposed one by one because of rapid urban development and unless taken up, and transported to safety in a museum, or preserved in some other fashion, they will be lost to humanity. The "corpus" of Tunisian mosaics being prepared by this project includes a complete, detailed description of each mosaic unearthed; all this data will henceforth be available generally in university and museum libraries.

<u>U. S. Dollar Equivalent in Tunisian Dinars</u>	FY 1973 est.	120,000
	FY 1972 est.	61,068
	FY 1971	58,112
	FY 1970	58,691
	FY 1969	28,628

42. <u>Institution</u>	<u>Title of Project</u>
University of Illinois Urbana, Illinois	"Comparative Studies of the Effects of Cultural Change on Folk Music in Tunisia."

Traditional communities on the Tunisian Island of Djerba represent one of the original sources of musical traditions which have since become widely diffused in the Mediterranean area. With rapid development and changes in Tunisia, the time is coming when these musical traditions may be lost. This project, which is coordinated with University of Illinois studies in ethnomusicology in Iran, Turkey, and Israel (See Item #30 above), aims to document and explain the significance of this important musical tradition.

<u>U. S. Dollar Equivalent in Tunisian Dinars</u>	FY 1973 est.	25,000
---	--------------	--------

b. New Archeology Projects in Tunisia

43. <u>Institution</u>	<u>Title of Project</u>
New York University New York, New York	"Modernization in Rural Tunisia."

This is a joint project in which an experienced American investigator will team up with an experienced Tunisian investigator to examine the social and cultural changes which are coming about in rapidly developing Tunisia; and the implications of these social and cultural changes for further development. The study will focus on two communities in the Mejerda Valley of Central Tunisia which have been traditionally rich agricultural centers but which are now faced with the crisis of adjustment to modern ways and to a modern agricultural marketing system.

<u>U. S. Dollar Equivalent in Tunisian Dinars</u>	FY 1973 est.	68,000
---	--------------	--------

IX. YUGOSLAVIAa. On-Going and Pending Archeology Projects in Yugoslavia

<u>44. Institution</u>	<u>Title of Project</u>
University of Minnesota Minneapolis, Minnesota	"Excavations at the Palace of the Roman Emperor Diocletian at Split, Yugoslavia."

After the Barbarian invasions overran the Roman Empire the huge palace of the Roman Emperor Diocletian at what is today Split was abandoned, and an entire medieval city later grew up within the palace walls. This excavation represents a unique opportunity to learn more about Roman times since it is being conducted in conjunction with the urban renewal program of the modern Yugoslav city of Split. Since people live or will live in new houses on the sites, they can only be excavated in connection with the urban renewal project now going on.

<u>U.S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	75,000
	FY 1972	77,381
	FY 1971	12,553
	FY 1970	60,288
	FY 1969	78,184
	FY 1968	32,505

<u>45. Institution</u>	<u>Title of Project</u>
Denison University Granville, Ohio	"Excavations at Sirmium, a Roman Provincial Capital."

Among other things, this project serves to support the training program in archeology of one of America's smaller universities, drawing American students from a number of universities, primarily in the midwest. The site was one of the important provincial capitals of the Roman Empire and its excavation provides new information about community life, and civil and military organization in Roman times not available from the "classical" sites in countries such as Italy. This project is being completed, and the publication of the results of this research is in preparation.

<u>U.S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1972 est.	16,844
	FY 1971	61,000
	FY 1970	61,599
	FY 1969	65,223
	FY 1968	34,285

<u>46. Institution</u>	<u>Title of Project</u>
University of California Los Angeles, California	"Excavation of an Early Neolithic Settlement at Anza, Macedonia, Yugoslavia."

The site at Anza has through history been a crossroads of the cultures and civilizations, all formative in the development of Western Civilization. This excavation has broken new ground in European archeology since Americans and Yugoslavs working together have been able to combine techniques and traditions. This is the first American excavation, and perhaps one of the first American cultural enterprises of any kind to be mounted in historic Macedonia. An entirely distinct culture in Eastern Europe has been uncovered as a result of this work, and the results are already beginning to appear in published form for the benefit of the scholarly community.

<u>U. S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	15,000
	FY 1972	11,070
	FY 1970	50,487
	FY 1969	30,900

47. <u>Institution</u>	<u>Title of Project</u>
University of Michigan Ann Arbor, Michigan	"Excavations of Middle Paleolithic Remains in Northern Bosnia."

Techniques developed in the study of American Indian mounds are being applied to the remains of the peoples who inhabited Europe in the old Stone Age. The old Stone Age sites are much rarer than the sites inhabited in later times, and hence this excavation will provide much valuable information and material to be compared with that uncovered elsewhere dating from a similar time period

<u>U. S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	20,000
	FY 1971	33,200
	FY 1969	15,220

48. <u>Institution</u>	<u>Title of Project</u>
University of Texas Austin, Texas	"Archeological Excavations at Stobi."

Macedonia was a crossroads in ancient times and the excavation of this classical site will provide us with considerable knowledge about the interaction between the East and the West.

<u>U. S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	80,000
	FY 1972 est.	79,157
	FY 1970	40,000

49. <u>Institution</u>	<u>Title of Project</u>
Southern Illinois University Carbondale, Illinois	"The Cultural, Economic, and Social Impact of Rural Road Construction."

With so many areas around the world rapidly modernizing, the results of this study could prove extremely valuable in many parts of the world. The basic question posed is: what happens when a road is built into a village or rural area previously isolated from the outside world. What happens to the people, their culture, their families, patterns of trade, immigration and emigration, and soon. The Principal Investigator is an American whose parents immigrated to this country from Yugoslavia, has spent time in Yugoslavia on scholarships, speaks several Slavic languages, and is thus admirably suited to conduct a study such as this in conjunction with Yugoslav colleagues.

<u>U.S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	30,000
	FY 1972 est.	28,000

b. New Archeology Projects in Yugoslavia

<u>50. Institution</u>	<u>Title of Project</u>
University of Kansas Lawrence, Kansas	"Palaeoecology and Prehistory of Lake Ludas, Yugoslavia."

This will be one of the most sophisticated studies of ancient cultural remains ever attempted in Eastern Europe, performed by a scholar who has mastered the new American techniques which aim to reconstruct not only the culture of prehistoric peoples but the environment in which they lived as well. At the same time the Principal Investigator has been trained on European sites where American experience has been relatively thin. This study will add important knowledge to a lesser known period of European prehistoric culture, since most of the excavations in Eastern Europe have concentrated on later periods.

<u>U.S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	20,000
	FY 1972 est.	22,753

<u>51. Institution</u>	<u>Title of Project</u>
University of Massachusetts Amherst, Massachusetts	"The Changing Structure of the Family in Serbia in the Context of Ecological, Socio-Economic and Related Demographic Changes since the 19th Century."

The main objective of this project is to contribute to greater understanding of the modernization of familial social structure in rapidly developing Yugoslavia. It will be a joint American-Yugoslav project, and will make use of existing material in archives pertaining to traditional family structure and of direct field observations and questionnaires to determine how family structure is changing and what the implications of those changes will be. What happens in an Eastern European country such as Yugoslavia in the area of social and familial change will have value for understanding social change elsewhere.

U.S. Dollar Equivalent in Yugoslav Dinars

FY 1973 est. 40,000

52. InstitutionTitle of ProjectHarvard University
Cambridge, Massachusetts"Oral Epic Poetry of
Avdo Mededovic."

This project aims to make available to American scholars an English translation of the famous oral Serbo-Croatian epic poem by the illiterate Yugoslav poet Avdo Mededovic. Epic poetry delivered orally by bards is a cultural tradition which goes back to the Greek poet Homer and before. What is important in this instance is the work of a contemporary man who functions essentially as Homer functioned among the early Greeks. The transcription and translation of the poem which he sings aloud will throw a great deal of light not only on Yugoslav customs and cultural traditions specifically but upon those of any traditional society where literacy is uncommon and where oral traditions accordingly have to be depended upon.

U.S. Dollar Equivalent in Yugoslav Dinars

FY 1973 est. 13,410

53. InstitutionTitle of ProjectWesleyan University
Middletown, Connecticut"Developmental Cultural Ecology
in the Neretva-Urban River
Basin."

This study aims, through interdisciplinary studies applied to an entire upland zone in Yugoslavia, to answer the questions of why man came to a particular region, what environmental factors shaped his coming and development, and what was the history of his culture in the area. Selection of this relatively limited area in which to work will allow the collection of enough concentration data to allow meaningful conclusions and will also allow the representatives of various disciplines to work closely together--archeologists, classicists, geologists, anthropologists, and biologists.

U.S. Dollar Equivalent in Yugoslav Dinars

FY 1973 est. 50,000

54. InstitutionTitle of ProjectRice University
Houston, Texas"Archeological and Investigations
of Bassianae and Its Related
Environments in Yugoslavia."

Rice University and the Archeological Institute of Belgrade plan to collaborate on the excavation of this ancient Romano-Byzantine town situated between the Sava and Danube rivers, 60 kilometers west of modern Belgrade. Founded during the early Empire, Bassianae survived through six centuries as a strategic stronghold on the Roman road to Constantinople. Excavation would seek to determine the nature of the earliest occupation of the site and the subsequent development of the city.

U.S. Dollar Equivalent in Yugoslav Dinars

FY 1973 est. 62,819

55. InstitutionTitle of Project

University of Missouri
Columbia, Missouri

"Study of Comparative Material
for Late Roman Pottery Found
at Jalame."

The purpose of this project is to enable study of a variety of Roman pottery found on sites in Yugoslavia in comparison with similar materials found on classical sites in Israel by University of Missouri excavations (See, for example, Item #27 above). This modest project will have disproportionate results in helping to fill in our knowledge of the Roman Empire that ringed the entire Mediterranean Sea.

U.S. Dollar Equivalent in Yugoslav Dinars

FY 1973 est. 3,000

B. SYSTEMATIC AND ENVIRONMENTAL BIOLOGYI. EGYPTa. On-Going and Pending Biology Projects in Egypt56. InstitutionTitle of Project

National Museum of Natural
History, Smithsonian Institution,
Washington, D.C.

"A Serological and Ectoparasite
Survey of the Migratory Birds of
East Africa"

Based in Egypt, this project traps representative birds migrating through Northeastern Africa, collects blood and ectoparasite samples, and then bands the birds before releasing them (reports on the capture of banded birds from other places in Europe will yield significant information about the migration patterns of the birds). Information about the migratory patterns of the birds, plus an analysis of the blood samples and the parasites collected from the birds, has already provided significant information about the role of migrating birds in spreading diseases which can attack crops, animals, and man. The Rockefeller Virus Laboratories are collaborating with the Smithsonian on this project.

U.S. Dollar Equivalent in Egyptian Pounds

FY 1973 est.	45,000
FY 1972 est.	45,000
FY 1971	44,930
FY 1970	24,680
FY 1969	33,780
FY 1967	24,593

57. InstitutionTitle of Project

Union College
Schenectady, N. Y.

"Plankton Communities of the
Nile River Delta"

Assessing the impact of man's engineering undertakings upon the total environment is an urgent area for study. It is becoming clear that

engineering studies alone cannot provide adequate information to governments for decisions about what will, in fact, increase the well being of the human population. Reduction of the flow of nutrients into the Mediterranean because they are trapped behind the Aswan Dam has all but eliminated the shrimp fisheries of the Nile Delta. This study proposes to monitor the changes in the coast line and in the amount of salt in previously-fished fresh water lakes in the delta resulting from the change in the Nile's flow.

<u>U.S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973 est.	50,000
	FY 1972 est.	50,000

58. <u>Institution</u>	<u>Title of Project</u>
Office of Environmental Sciences, Smithsonian Institution, Washington, D.C.	"Symposium on Biological Control of the Snail, Carrier of the Disease Bilharzia"

At a time when the limitations on the use of chemical pesticides are becoming painfully clear because we are learning about their secondary effects in destroying birds and fish, etc., attention must be paid to nature's own methods of controlling populations of pests. This proposal seeks to control the disease-carrying snail associated with tropical rivers and irrigation systems. The construction of the Aswan Dam caused a dramatic rise in the cases of bilharzia in people working on the dam or on the canal system associated with it. The disease has been an important factor in absenteeism among agricultural workers employing waters diverted from the Nile. The proposed symposium would bring together biologists specializing in the snails and in the use of biological processes to control pests.

<u>U.S. Dollar Equivalent in Egyptian Pounds</u>	Fy 1973 est.	20,000
--	--------------	--------

b. New Biology Projects in Egypt

59. <u>Institution</u>	<u>Title of Project</u>
University of Michigan Ann Arbor, Michigan	"Systematic Studies of the Mollusk Genus <u>Bulinus</u> in Africa and Adjacent Regions"

This project is a "systematic" study of one common genus of African snail, especially abundant in Egypt. As disease carriers snails are animals whose biology and habits it is particularly important to understand. These studies will be coordinated with similar studies done by the University of Michigan's Museum of Zoology in other areas of the world such as India (see Item #64 below). A biologist at the University of Cairo will directly collaborate with his Michigan colleagues on this study.

<u>U.S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973 est.	31,200
--	--------------	--------

66. InstitutionTitle of Project

Yale University
New Haven, Connecticut

"Habitat Relationships and
Disbtibution of Wild Ungulates
in the Gir Forest of India"

Study of the wilderness has a critical role to play in developing long-range guidelines for management of natural resources. By comparing studies of lands cultivated by man with those left to grow naturally, it is possible to learn what the land is capable of producing as opposed to what man asks the land to produce. Plans for the conservation of wilderness grow out of studies like those in the Gir Forest. This study of wild ungulates (hooved animals) in the Gir Forest is nearing completion, but Yale University plans to undertake studies concerned with other aspects of this important wildlife area in India (see Item #92 below).

U. S. Dollar Equivalent in Indian Rupees

FY 1971	26,255
FY 1970	35,055

67. InstitutionTitle of Project

National Museum of Natural
History, Smithsonian
Institution, Washington, D. C.

"A Flora of the Hassan District,
Mysore State, Ghat Mountains
Southwest India"

Underlying all environmental studies on land must be thorough studies to identify accurately each form of plant life and the place of each form in the community of living things, the ecosystem, of which it is a part. This study in India is one such carefully controlled study of a limited area with a wide range of plant life resulting from rainfall which varies from less than 30 inches to somewhere between 100 and 300 inches per year. It will provide correctly identified specimens for the National Herbarium at the Smithsonian strengthening these collections with materials from the Eastern Hemisphere. United States scientists, outstanding in the study of the tropics of our own hemisphere, are now undertaking comparative studies in other tropics, the essential next step in understanding the biology of this climatic zone.

U. S. Dollar Equivalent in Indian Rupees

FY 1973 est.	25,000
FY 1972 est.	25,000
FY 1971	26,400

68. InstitutionTitle of Project

National Museum of Natural
History, Smithsonian Insti-
tution, Washington, D. C.

"Systematic and Behavioral
Studies of Flatfishes and
Gobioid Fishes"

Fish to be studied under this project are similar to the sole and the flounder which are common in American diets. The knowledge of the nature, behavior and distribution of these fish in Indian waters will contribute to commerical fisheries there as well as to an understanding of the evolution of marine animals into semi-aquatic animals or those adapting to life on land.

U. S. Dollar Equivalent in Indian Rupees

FY 1973 est.	25,000
FY 1972 est.	25,000

60. <u>Institution</u>	<u>Title of Project</u>
Southern Methodist University Dallas, Texas	"Egyptian Geology and Paleontology"

The initial phase of this project enabled American paleontologists to participate in a symposium on Egyptian geology and paleontology sponsored by the Geological Survey of Egypt. This symposium brought together knowledge and expertise which will now be published for the first time in the form of proceedings. As a result of problems identified and contacts made through the symposium, Southern Methodist geologists and paleontologists project field research in Egypt which will be especially significant in view of some of the unique geological features of the Egyptian terrain, mainly desert.

<u>U.S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973 est.	50,000
	FY 1972	15,829

61. <u>Institution</u>	<u>Title of Project</u>
Smithsonian Institution Washington, D.C.	"Legal Controls on Environmental Degradation"

World wide concern about the environment has motivated many of the scientific studies of the environment; such scientific studies are represented among the projects for which "excess currencies" are being sought by the Smithsonian. The present project aims to focus on another aspect of the environmental crisis: the way in which laws can contribute to environmental degradation; and, conversely, the way in which laws can help contribute to positive solutions to environmental problems. Scientists, lawyers, and educators would be asked to contribute to this symposium on environmental law.

<u>U.S. Dollar Equivalent in Egyptian Pounds</u>	Fy 1973 est.	60,000
--	--------------	--------

II. GUINEA

- a. On-Going and Pending Biology Projects in Guinea
None.
- b. New Biology Projects in Guinea

62. <u>Institution</u>	<u>Title of Project</u>
Chico State College Chico, California	"Systematic Studies of Ants and Parasites Associated with Man"

Eighty percent of the animals on the earth are insects. Two of the most important groups of these from the point of view of their affect on mankind are ants and termites. If we are to understand how to reduce the damage brought about by these insects, we have to know their precise nature and their role in the economies of other animals. This particular study proposes the collection of ants and termites in Guinea and particularly of the beetles (Staphylinidae) associated with them. This study is an extension of others by the same investigators covering the tropics in both this hemisphere and in Africa and Asia.

<u>U.S. Dollar Equivalent in Guinean Francs</u>	Fy 1973 est.	10,000
---	--------------	--------

III. INDIA

- a. On-Going and Pending Biology Projects in India

63. InstitutionTitle of Project

National Museum of Natural
History, Smithsonian
Institution, Washington, D. C.

"Indian Migratory Bird Project "

This project aims to continue the study of the patterns of migration of birds of South Asia as well as their possible role in the spread of diseases harmful to animals, crops and man (a continuation of World Health Organization studies) and to employ the information obtained in the preparation of a Handbook of Indian Birds. The handbook and the studies of migration and of possible disease transfer are essential elements in understanding the basic ecology of India where man and a wide variety of animals live in closer interrelation than anywhere else on earth.

U. S. Dollar Equivalent in Indian Rupees

FY 1973 est.	35,000
FY 1972 est.	25,000
FY 1971	34,933
FY 1970	17,800
FY 1969	3,417

64. InstitutionTitle of Project

University of Michigan
Ann Arbor, Michigan

"Cytological Studies of Indian
Mollusks"

To continue studies to better understand and thus control snails (mollusks), animals known to carry diseases which attack man and his domesticated animals. The diseases include shistosomiasis, liver fluke and other worm parasites. These diseases are wide spread in the tropics and they have a way of spreading dramatically in an area where hydroelectric dams and irrigation canals are being built, disturbing the ecological balance. These studies employ the most modern techniques to understand the basic genetic materials of the cells of snails and thus to make it possible to tell one family of snails from another when they are from all outward appearances identical. These studies are being phased out as regards India, but the same team of scientists plans to continue this work elsewhere, notably in Egypt (see Item #59, above).

U. S. Dollar Equivalent in Indian Rupees

FY 1971	24,558
FY 1970	25,562
FY 1969	25,414

65. InstitutionTitle of Project

University of Michigan
Ann Arbor, Michigan

"Productivity of Tropical Lakes
in South India"

This study of the way things grow in fresh water in the tropics is one of the many studies essential to an understanding of the ways man can prevent the pollution of productive bodies of water and develop them as a source of high protein food.

U. S. Dollar Equivalent in India Rupees

FY 1973 est.	32,000
FY 1972 est.	32,000

69. InstitutionTitle of Project

University of Georgia
Athens, Georgia

"Organic Productivity & Nutrient
Cycling in Tropical Ecosystems"

Management of the landscape depends on an understanding of nature's process of growing plants and the circulation of plant food by this process. Research in Europe and North America has provided much information about these processes in temperate climatic regions, but little is known about these processes in tropical regions. This project proposes study of forest, grassland and cultivated land by techniques tested in the Western Hemisphere by scholars from one of the United States' pioneering ecological research institutions.

U. S. Dollar Equivalent in Indian Rupees

FY 1973 est. 42,000

FY 1972 est. 36,000

70. InstitutionTitle of Project

Office of Environmental Sciences
Smithsonian Institution, Washing-
ton, D.C.

"Coral Reefs in India"

It is proposed to study coral reefs in the vicinity of India. Such reefs are best known as geological features and little understood as biological communities with special relationships to the ocean, to the land and to man's activities. This study would investigate seasonal and long term changes in a variety of reefs in different physical locations and climatic zones and with varying forms of associated plants and animals.

U. S. Dollar Equivalent in Indian Rupees

FY 1973 est. 56,000

FY 1972 est. 6,000

71. InstitutionTitle of Project

Pennsylvania State University
University Park, Pennsylvania
and
University of Minnesota
Minneapolis, Minnesota

"International Spread of Plant
Disease by Means of Airborne
Organisms"

The air carries much biologically significant material such as the pollen which fertilizes plants and causes hay fever or the exhaust fumes of automobiles and industries which block out the sun's rays over our cities, affecting plants, animals and man. Other living organisms are carried in the atmosphere, such as the spores of fungus, disease microbes, and even minute animals called aphids. This proposal would extend to India studies initiated in the United States under the International Biological Program designed particularly to study plant diseases which are transmitted through the air without respect for international boundaries. The purpose is to understand the evolution of the diseases as well as to record the losses in plant life resulting in the diseases. Such studies are but one element in a detailed program which seeks to promote and coordinate internationally oriented research on critical problems in this field of aerobiology and to ensure the application of standardized techniques and the exchange of comparable data between disciplines and nations.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	50,000
	FY 1972 est.	2,000

<u>72. Institution</u>	<u>Title of Project</u>
University of Colorado Boulder, Colorado	"Comparative Studies of Human Adaptability at High Altitudes"

Cardio-vascular diseases which are the major causes of death in the United States are less frequent in populations living at high altitudes. Other effects of living at high altitudes limit human fertility and work output. These studies seek to understand the process of life among human populations at these altitudes.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	50,000
	FY 1972 est.	2,000

<u>73. Institution</u>	<u>Title of Project</u>
Utah State University Logan, Utah	"Comparative Studies in Arid Climates"

Large areas of Southwestern United States are desert. The study and management of this landscape can be expected to provide specific data to improve the well-being of Americans of that area. Full understanding of the relationships of the plants and animals of this area and of the cycling of nutrients through such an ecosystem requires comparative studies in roughly similar regions elsewhere. The desert areas of India provide excellent comparative study areas. They can be expected also to provide vital data to the Indian Government where the expansion of deserts and the consequent loss of productive land is going forward at an alarming pace.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	75,000
	FY 1972 est.	5,000

<u>74. Institution</u>	<u>Title of Project</u>
Utah State University Logan, Utah	"Ecology and Behavior of the One-Horned Rhinoceros, an Endangered Species"

This study of the ecology of the Kaziranga Wildlife Sanctuary along the Bharmaputra River will provide urgently needed data to ensure the conservation of the one horned rhinoceros and the wilderness essential for his survival as well as to guide the Government of Assam in management of similar lands in northeastern India.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	65,000
	FY 1971	4,000

75. InstitutionTitle of Project

University of Texas
Austin, Texas

"Ecology of Indian Ungulates
in the Wildlife Sanctuaries
of Rajasthan"

The University of Texas has intensively studied the biology of hooved animals (ungulates) from different parts of the world to develop commercial herds for man's food. This study proposes the study of the biology of several kinds of hooved mammals namely the blackbuck, the nilgai antelope and the chital which are currently being raised in Texas with varying degrees of success. The studies of these animals on their native ranges is expected to yield information to guide their better management in the United States.

U.S. Dollar Equivalent in Indian Rupees

FY 1973 est.	30,000
FY 1972 est.	30,000
FY 1971	2,000

76. InstitutionTitle of Project

University of California
Davis, California

"Ecology and Behavior of
Hoolock Gibbons"

The gibbon is unique among man-like apes in that he mates for life. He also has a strict, one-family territorial social organization. It now seems possible that this animal can change his social organization when the necessities of life require it. Specifically, when the trees lose their leaves and cease to provide food, it is believed that the gibbon will form larger groups made up of several families in order to forage for food. If this belief can be verified one of the missing links in the development of social organization from man's early primate ancestors to man's own communities of families will have been supplied.

U.S. Dollar Equivalent in Indian Rupees

FY 1973 est.	25,000
FY 1972 est.	15,000
FY 1971	7,000

77. InstitutionTitle of Project

National Museum of Natural
History, Smithsonian Institu-
tion, Washington, D.C.

"Ecological and Behavioral
Studies of Rhesus Monkeys
and Langurs"

These proposed studies will examine two problems of special interest to man's understanding of his own world. The rhesus monkey is the principal animal employed in medical research in the United States. They are cropped for this purpose in India. The study of this monkey will compare their condition in two neighboring states one in which they are being captured constantly for medical research and the other where this has never happened. The outcome should include valuable information on the management of the animal to ensure needed supplies for research. The langur inhabits the same areas that the rhesus monkeys do and their study together is an essential part of the ecology

of these animals. The langur studies will focus on behavior, particularly on infanticide which has been observed periodically. Population and other forms of ecological pressure will be studied in seeking an explanation for this behavior.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	30,000
	FY 1972 est.	30,000
	FY 1971	2,500

78. <u>Institution</u>	<u>Title of Project</u>
University of Idaho Moscow, Idaho	"Survey of the Remaining Indian Tiger Population"

The tiger is almost extinct. Immediate study is essential to determine how many remain, and where and how to provide adequate wilderness to ensure the survival of those remaining.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	20,000
	FY 1972 est.	10,000
	FY 1971	3,500

79. <u>Institution</u>	<u>Title of Project</u>
Office of Environmental Sciences Smithsonian Institution Washington, D. C.	"A Cooperative Program of Environmental Assessment"

As a result of a joint Indo-American Ecology Symposium held in New Delhi in February, 1971, plans for a major program of "environmental assessment" studies are underway. These studies will be carried out jointly by Indian and American scientists and institutions; they will be concerned with the exact quantitative measurement of important aspects of the natural environment. The basic scientific data expected to be developed by this program will not only contribute to the solution of environmental problems in developing India but will add vital data on the environment of use to American scientists and institutions working on U. S. environment problems. The priority problems to be attacked are now in the process of being identified. Budget requests in future years will include descriptions of concrete projects as they emerge under this developing program.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	250,000
	FY 1972 est.	60,000
	FY 1971	30,000

80. <u>Institution</u>	<u>Title of Project</u>
Virginia Commonwealth University Richmond, Virginia	"Comparative Bioenergetics of the House Sparrow"

Because the common house sparrow is not only abundant but is found in most places in the world, this species provides the means to make comparative studies in "bioenergetics"--a basic aspect of ecology, which is concerned with what living things take from their environment

in relation to what they give back to the environment, and the balances resulting when the intake and output of all kinds of living beings in a given environment are considered together.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	15,000
	FY 1972 est.	15,000

81. <u>Institution</u>	<u>Title of Project</u>
Smithsonian Tropical Research Institute, Smithsonian Institution Washington, D. C.	"Convergence at the Community Level: Nilgiri Sholas and California Oak-Madrone Woods"

This project aims to compare two very different--yet "strikingly similar"--types of forests, in India and California respectively. The result of the studies will tell us a great deal about what kinds of plants grow in what kinds of conditions, and about the processes which shape the development of forests. The study will also take into account the animal life dependent on these two particular forests.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	15,000
	FY 1972 est.	15,000

82. <u>Institution</u>	<u>Title of Project</u>
Smithsonian Tropical Research Institute, Smithsonian Institution Washington, D. C.	"Studies in Comparison of Tropical Forest Structures"

This is a prototype study, now virtually complete with a resulting scientific publication in preparation, on which the above project (Item #81) will build. The methodology developed in the course of this study will be applied to other studies which will tell us about the interaction and interdependence of living things.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1971	6,130
---	---------	-------

83. <u>Institution</u>	<u>Title of Project</u>
Smithsonian Tropical Research Institute, Smithsonian Institution Washington, D. C.	"To Study the Structure and Function of Tropical Avian Communities"

To study any element of the living environment throws light on the environment as a whole. These studies of birds in tropical environments in India have been coordinated with similar studies in tropics in both Africa and Central America. These studies are completed and a scientific publication is in preparation.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1971	11,505
---	---------	--------

84. <u>Institution</u>	<u>Title of Project</u>
National Zoological Park Smithsonian Institution Washington, D. C.	"Comparative Studies of Elephants and Primates"

Smithsonian studies of the elephant and of three related monkeys, each inhabiting different zones of climate and altitude in Ceylon have provided basic information upon which plans to save the threatened elephant and to breed the monkeys for medical research can be based. These studies also provided the initial focus around which studies of the total environment proceeded including the restudy of the plants of Ceylon. The ecological and behavioral studies of the monkeys and the elephants provide a tested model for comparative studies of these animals in India.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	30,000
	FY 1972 est.	20,000
	FY 1971	21,852

<u>85. Institution</u>	<u>Title of Project</u>
Smithsonian Tropical Research Institute, Smithsonian Institution Washington, D. C.	"Comparative Studies in Evolutionary Ecology in India"

One-half of mankind lives in the tropics. An understanding of the biology of the tropics is critical to the livelihood of this population. The Smithsonian Tropical Research Institute leads in the continuous study of this climatic zone and of ways to predict the effects of man's actions on that zone. The objective is to inform the planning of industry and governments in order to reverse the process of destruction of the environment and ensure an improving environment for mankind.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	10,000
	FY 1972 est.	10,000
	FY 1971	3,000

b. New Biology Projects in India

<u>86. Institution</u>	<u>Title of Project</u>
National Museum of Natural History Smithsonian Institution Washington, D. C.	"Systematics and Zoogeography of the Stomatopod Crustaceans of the Eastern Coasts of India"

Study of the seas to improve man's use of the food available there is among the few first priority scientific problems today. This study is an outgrowth of the International Indian Ocean Expedition to which the United States made a significant national contribution. Much of the material obtained in the cruises on the U. S. Research Vessel the ANTON BRUN has been returned to the Smithsonian where it is under study. Comparative studies of earlier collections are essential and this material is located primarily in Calcutta, India with the Indian Zoological Survey.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	20,000
---	--------------	--------

<u>87. Institution</u>	<u>Title of Project</u>
University of California Riverside, California	"A Program of Desert, Grass - lands, and Forest Ecology"

Underlying the management of our landscapes must be a thorough understanding of the entire biological process. We know that use of certain stable pesticides to kill rodents which attack crops is also a way to kill predators like owls and hawks which eat rodents and thus also aid man's efforts to control the pest. Studies of the forests and grasslands would include studies of the rodents and their predators as well as other relationships which must be understood to manage the production of these areas.

U.S. Dollar Equivalent in Indian Rupees FY 1973 est. 50,000

<u>88. Institution</u>	<u>Title of Project</u>
Harvard University Cambridge, Massachusetts	"Population Biology of Indian Plants"

This joint project between Harvard and the Association for the Cultivation of Science in Poona, India, will concentrate on population biology studies on Indian plants which can be compared with similar studies on American plants already carried out by Harvard's Gray Herbarium in this country.

U.S. Dollar Equivalent in Indian Rupees FY 1973 est. 30,000

<u>89. Institution</u>	<u>Title of Project</u>
Cornell University Ithaca, New York	"Plant Developmental and Anatomical Studies (Pteridophytes and Monocots)"

These studies arise from mutual interests of Cornell University and Sardar Patel University in India. Similar studies on the same types of plants in both America and India suggested the considerable scientific value of coordinating the studies and identifying common techniques and desired data.

U.S. Dollar Equivalent in Indian Rupees FY 1973 est. 15,000

<u>90. Institution</u>	<u>Title of Project</u>
University of Michigan Ann Arbor, Michigan	"Observations and Collections of Uropeltid Snakes"

The primary purpose of this project is to gather live uropeltid snakes for transport to the United States for studies which the Principal Investigator has been carrying out for the past twelve years here. Through collaboration with Indian herpetologists observations of the locometer, feeding, prey-catching and mate-recognition behavior of these reptiles will be conducted in their natural habitats in India.

U.S. Dollar Equivalent in Indian Rupees FY 1973 est. 35,000

<u>91. Institution</u>	<u>Title of Project</u>
University of Chicago Chicago, Illinois	"Asiatic Lion and Other Cat Species in the Gir Forest"

This project is one of several biological projects undertaken in India's Gir Forest in an effort to stop deterioration of this wildlife sanctuary. Studies such as this play a crucial role in the determination of long-range guidelines for managing natural environments and natural resources generally. This forest is one of the last refuges of the Asiatic Lion and other leopards, and the aim of this study will be to develop data which will enable the proper management of these species and prevent their extinction. The study is related to other studies in the Gir Forest carried out by Yale University (see Item #66 above and #92 below). It is also pertinent to the problems of certain endangered species in this country.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est. 40,000
--	---------------------

<u>92. Institution</u>	<u>Title of Project</u>
Yale University New Haven, Connecticut	"Plant Ecology in the Gir Forest"

This study builds on data from previous Yale University studies which concentrated primarily on the wild ungulates (hooved animals) in the Gir Forest (see Item #66 above). In this instance Yale scientists will concentrate on the plant life of the forest--the basis of all the life in this important but unfortunately deteriorating wildlife sanctuary in Northwest India. More data are needed regarding what plants grow in the forest, when leaves and blooms grow (important as animal foods) and what the productivity of the forest is.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est. 41,890
--	---------------------

IV. ISRAEL

a. On-Going and Pending Biology Projects in Israel

<u>93. Institution</u>	<u>Title of Project</u>
Office of Environmental Sciences Smithsonian Institution Washington, D. C.	"Biota of the Red Sea and Eastern Mediterranean"

To study in Israel the changes of marine life in the Mediterranean and Red Seas resulting from the movement of fish and other organisms through the sea-level Suez Canal. Such studies help understand changes which might result from construction of a sea-level canal through the isthmus of Panama.

<u>U.S. Dollar Equivalent in Israeli Pounds</u>	FY 1972	75,000
	FY 1971	94,724
	FY 1970	119,462
	FY 1969	133,473
	FY 1967	122,000

94. InstitutionTitle of Project

State University of New York
Stony Brook, New York

"A Living Coral Reef at Eilat"

To study coral reefs which are best known as geological features and little understood as biological communities with special relationships to the ocean, to the land and to man's activities. This study at Eilat, Israel is providing a firm data base for computer analyses of the coral species and the related plants and animals, much as forests are studied. The coral are roughly equivalent to the trees in a forest providing a basic biological structure. The fish are roughly equivalent to the birds and so on, with sea animals and plants finding niches in the reef would just as insects, snails, moss and the like thrive in a forest.

U. S. Dollar Equivalent in Israeli Pounds

FY 1972 est.	23, 000
FY 1971	51, 114
FY 1970	7, 122
FY 1968	12, 036

95. InstitutionTitle of Project

Texas A & M University
College Station, Texas

"Ecology and Behavior of Gazelles
in Israel"

Conservation of gazelles as a human food source is an objective of these studies. The gazelles under study are a special species peculiarly adapted to living in arid regions. They live off sparse vegetation in areas without free water. The species is threatened with extinction. To provide for their survival and indeed their development as a natural resource, it is necessary to undertake these basic studies of their behavior and ecology.

U. S. Dollar Equivalent in Israeli Pounds

FY 1972 est.	35, 000
FY 1971	36, 470
FY 1970	45, 070

V. MOROCCOa. On-Going and Pending Biology Projects in Morocco96. InstitutionTitle of Project

National Museum of Natural
History, Smithsonian Institution
Washington, D. C.

"A Geographical and Ecological
Study of the Mammals of
Morocco"

To continue studies in the arid lands of Morocco of rats, mice and other rodents in order better to understand and control these animals of great importance to man. The animals need study because they befoul stored food, consume a substantial part of agricultural crops and serve as a reservoir of disease.

U. S. Dollar Equivalent in Moroccan Dirhams

FY 1973 est.	20, 000
FY 1972 est.	20, 000
FY 1971	92, 295
FY 1970	66, 840

<u>97. Institution</u>	<u>Title of Project</u>
Duke University Durham, North Carolina	"Studies of <u>Ramalina</u> Lichens in Morocco"

The study of the mechanisms employed by plants and animals in adapting to their special places in the ecosystem is an essential part of learning to manage nature's production. This study proposes to identify the different kinds of fungus growing at different altitudes and in different temperature and moisture zones by studying the chemicals produced by fungi in these differing circumstances.

<u>U. S. Dollar Equivalent in Moroccan Dirhams</u>	FY 1972 est.	3,278
	FY 1971	2,711

<u>98. Institution</u>	<u>Title of Project</u>
University of California Berkeley, California	"Biosystematic Studies in Moroccan Flora"

Basic to any study of the management of the landscape is a modern identification and description of plant life. Such studies are essential for each national program of resource management. They are greatly needed in Morocco. The results can also be expected to contribute to an understanding of the plant life of all arid regions including those in the United States.

<u>U. S. Dollar Equivalent in Moroccan Dirhams</u>	FY 1972 est.	1,900
	FY 1971	4,515

VI. PAKISTAN

a. On-Going and Pending Biology Projects in Pakistan

<u>99. Institution</u>	<u>Title of Project</u>
University of Washington Seattle, Washington	"Research on the Biology and Control of the Wild Boar in Pakistan"

The wild boar causes crop damage in Pakistan alone estimated at \$35,000,000 annually. Its control has been of concern to the Pakistani government, as it is to the other countries stretching from India to Europe. In Muslim countries the boar is considered, like the pig, an unclean animal and its numbers are not, therefore, controlled through regular cropping. The proposed study will provide basic biological information and information on the behavior and feeding habits of the boar upon which a program of control can be based. One result might be greater agricultural self-sufficiency in Pakistan.

<u>U. S. Dollar Equivalent in Pakistani Rupees</u>	FY 1973 est.	40,000
	FY 1972 est.	20,000
	FY 1971	37,328

<u>100. Institution</u>	<u>Title of Project</u>
National Museum of Natural History, Smithsonian Institution, Washington, D. C.	"Taxonomic Studies of the Marine Fauna of Pakistan's Continental Shelf"

The Arabian Sea is known from commercial fishing catches to be potentially highly productive. Very little is known about this sea, however, particularly about the northeastern portion off Pakistan and the mouth of the Indus River. This proposal seeks to study the continental shelf, to learn what is there, how it is distributed and in what quantities.

U. S. Dollar Equivalent in Pakistani Rupees FY 1973 est. 50,000

b. New Biology Projects in Pakistan

<u>101. Institution</u>	<u>Title of Project</u>
Cornell University, Ithaca, New York	"Sensory Studies of the Blind Indus River Dolphin"

This study aims to test the hypotheses, important in the phenomenon of vision generally, that visual sensitivity tends to match the predominant available wave-lengths of light. The Indus-river dolphin, almost but not totally blind, has an eye that serves as a light direction sensor rather than as a full-fledged eye. This species accordingly is ideal to test and confirm or eliminate certain theories about the way in which light is managed in animal vision.

U. S. Dollar Equivalent in Pakistani Rupees FY 1973 est. 22,000

VII. POLAND

a. On-Going and Pending Biology Projects in Poland

<u>102. Institution</u>	<u>Title of Project</u>
University of Georgia Athens, Georgia	"Bioenergetics of Small Rodents"

To continue studies in the temperate climate of Poland of rats, mice and other rodents in order better to understand and control these animals of great importance to man because they defoul stored food, consume a substantial part of agricultural crops and serve as a reservoir of disease.

U. S. Dollar Equivalent in Polish Zloties

FY 1973 est.	20,000
FY 1972 est.	20,000
FY 1971	19,994
FY 1969	73,468

<u>103. Institution</u>	<u>Title of Project</u>
University of Georgia Athens, Georgia	"Interaction of Small Rodents with Human Beings"

The University of Georgia has been a leader in the developing science of ecology and has innovated techniques of studying living things and their relationships. This project supplements that shown above (Item #102) which is studying rats, mice and other rodents in a number of different situations in the temperate climate of Poland with one likely by-product the better control of rats. This new study carries the earlier one an essential step forward with the study of the interrelations of rodents and man.

U.S. Dollar Equivalent in Polish Zloties	FY 1973 est.	25,000
--	--------------	--------

<u>104. Institution</u>	<u>Title of Project</u>
Queen's College University of the City of New York	"Museum Studies of Unique Specimens of Fossil Mammals"

Man can better understand how to manage his own world, if he understands how he reached his present condition. This study proposes to investigate one of the critical stages in the evolution of man by studying the changes in the ear region of the fossil skulls of reptiles and mammals which lived at the time when mammals were evolving out of their reptile ancestors.

<u>U.S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	2,000
	FY 1972 est.	2,000
	FY 1971	2,000

<u>105. Institution</u>	<u>Title of Project</u>
Oak Ridge National Laboratory Oak Ridge, Tennessee	"Temperate Zone Forests and Grassland Ecosystems"

As part of the International Biological Program (IBP) worldwide network of studies of the natural environment, the present studies would seek to determine energy and productivity in a temperate zone forest ecosystem, as is being done in other projects in a tropical setting (see, for example, Item #87 above). This project will be carried out in cooperation with Polish scientific investigators.

<u>U. S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	25,000
	FY 1972 est	25,000

VIII. TUNISIA

a. On-Going and Pending Biology Projects in Tunisia

<u>106. Institution</u>	<u>Title of Project</u>
National Museum of Natural History, Smithsonian Institution	"Studies on Systematics and Physiological Ecology of Tunisian Sponge Communities"

Important traditionally as a "crop" from the sea, sponge communities are equally important in terms of their relationships with other organisms that live in the sea. This study concentrates on a sponge community off the Tunisian coast, and focuses on the organisms involved and the principal physical factors which influence their morphological appearance and their distribution. The field work is substantially complete on this project and a publication is in preparation.

<u>U. S. Dollar Equivalent in Tunisian Dinars</u>	FY 1971	43, 530
---	---------	---------

<u>107. Institution</u>	<u>Title of Project</u>
American University of Beirut, Lebanon (Incorporated in New York State)	"Zoogeography and Community Structure of Sand-Beach Meiofauna of the Mediterranean Region"

Meiofauna are microscopic animals which live in the water. Though minute, they are important as among the ultimate links in the "food chain" upon which all life, including that of man, ultimately depends. Little is known about these animals. This study in the Mediterranean region will have application to other areas.

<u>U. S. Dollar Equivalent in Tunisian Dinars</u>	FY 1973 est.	10, 000
	FY 1972 est.	9, 889
	FY 1971	9, 668

<u>108. Institution</u>	<u>Title of Project</u>
Office of Environmental Sciences, Smithsonian Institution, Washington, D. C.	"Support for the Mediterranean Marine Sorting Center, a Facility for Processing Marine Organisms"

This facility was established, and operates, in cooperation with both the Smithsonian Oceanographic Sorting Center in Washington, D. C., and with the local Tunisian Institute of Oceanography and Fisheries. Its function is to speed the description of the fish and other organisms of the Mediterranean Sea and the accumulation of information about where they occur and their feeding habits through sorting in Tunisia of the scientific collections of the countries of the region and distribution of specimens by species to specialists around the world for study.

<u>U. S. Dollar Equivalent in Tunisian Dinars</u>	FY 1973 est.	250, 000
	FY 1972 est.	205, 000
	FY 1970	478, 736
	FY 1969	216, 962
	FY 1967	150, 000

<u>109. Institution</u>	<u>Title of Project</u>
Utah State University Logan, Utah	"Systems Analysis of the Pre- Saharan Ecosystem of Southern Tunisia"

This project is completely coordinated with the U. S. Desert Biome program of the United States National Committee for the International Biological Program, and aims to accomplish on the edge of the Sahara Desert what the USIBP studies are attempting in our own Western deserts, namely, information about what makes a desert a desert, whether the desert is advancing or contracting, whether its ecology is dynamic or stable, and similar questions. In answering these questions the most sophisticated of modern tools, including computer analysis of models developed, are employed. The present study will have considerable comparative value since it will be done along the same lines and employing the same methodologies as the Desert Biome studies in this country. The Tunisian Department of Agriculture is cooperating with this study, and awaiting its results as bearing upon its management and reclamation of desert lands.

<u>U.S. Dollar Equivalent in Tunisian Dinars</u>	FY 1973 est. 175,000
	FY 1972 97,249
	FY 1971 3,185

<u>110. Institution</u>	<u>Title of Project</u>
Office of Environmental Sciences, Smithsonian Institution, Washington, D. C.	"Pollution Studies in Lake Tunis"

The Lake of Tunis is a unique tropical lagoon which has served as a dump for sewage for some 2000 years ever since the ancient city of Carthage flourished on its shores. It is an extraordinarily productive lake and sustains a substantial commercial fishery. It is at the same time the bane of residents of Tunis. Its stench which persists throughout the year, increases to disturbing proportions in the fall of each year when the oxygen level of the lake drops killing the fish which wash ashore in masses. It drives Tunisians away from the lake and discourages tourism which is one prime source of hard currency for the developing Tunisian economy. A study of the lake will provide information on a unique biological process and the basis for a plan to reduce the stench and the fish kill.

U.S. Dollar Equivalent in Tunisian Dinars	FY 1973 est. 100,000
---	----------------------

b. New Biology Projects in Tunisia

<u>111. Institution</u>	<u>Title of Project</u>
National Museum of Natural History, Smithsonian Institution, Washington, D. C.	"Marine Decapod Crustaceans of North Africa"

The marine decapod crustaceans include shrimps, crabs, and lobsters and comprise more than 8000 species; they are thus commercially important marine animals and a knowledge of their biology and habits is thus useful. The aim of the present study is to produce a reference volume of the decapods of the North African coast which can be used by students, scientists, or fishermen; no such reference

volume exists for decapods in this region. The comprehensive baseline collections made for this study will provide a foundation for future studies on other aspects of the biology of decapods as well as for future studies on environmental change, effects of pollution, and on the migration of marine animals in the area.

U.S. Dollar Equivalent in Tunisian Dinars FY 1973 est. 57,000

<u>112. Institution</u>	<u>Title of Project</u>
Office of Environmental Sciences Smithsonian Institution Washington, D. C.	"Cooperative Marine Research aboard the Smithsonian Research Vessel R/V <u>Phykos</u> "

In conjunction with both the International Decade of Ocean Exploration (IDOE) and UNESCO's Cooperative Investigations of the Mediterranean (CIM), a number of American scientists and institutions are planning a variety of marine research programs in the Mediterranean. The Smithsonian Research Vessel R/V Phykos will function as a United States national vessel open to all United States marine research. The Phykos will operate primarily with Yugoslav dinar support (see Item #116 for a more complete description of its program), but the vessel will use Tunis as a port of call both for provisioning and for research in international waters coordinated with Tunisian research. Tunisian Dinars will accordingly be expended under the Phykos program.

U.S. Dollar Equivalent in Tunisian Dinars FY 1973 est. 100,000

IX. YUGOSLAVIA

a. On-Going and Pending Biology Projects in Yugoslavia

<u>113. Institution</u>	<u>Title of Project</u>
University of Colorado Boulder, Colorado	"Cooperative Studies on the Cytotaxonomy of Yugoslavian Flora"

The plants of Yugoslavia are varied because of the combination of tropical alpine and plains varieties which have taken root in its varied terrain. They are partially identified by means of the classic descriptive method, but little studied from the point of view of modern chromosome and chemical analysis. Such studies will not only contribute to the management of the plant life of Yugoslavia, but they will provide insights into the process of development of new strains of plants and of evolution itself.

U.S. Dollar Equivalent in Yugoslav Dinars FY 1973 est. 50,000
FY 1972 50,720

<u>114. Institution</u>	<u>Title of Project</u>
University of Illinois at Chicago Circle, Chicago, Illinois	"Evolutionary Relationships Among Upper Cretaceous Teleostean Fishes"

Most of the fish living today have evolved from fish which appeared first in the Cretaceous period, 120 million years ago. The complex process of identifying today's fish can be simplified by proper identification of their ancestors. This identification is the essential first step toward an understanding of the ecology of the seas and toward ensuring proper management of the resources of the seas.

<u>U. S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	15,000
	FY 1972	15,075

<u>115. Institution</u>	<u>Title of Project</u>
College of the Virgin Islands St. Thomas, V. I.	"Comparative Population Dynamics of Competitively Exclusive Lizard Species"

This study aims to show how a more vigorous and adaptable species of lizards can gradually colonize and displace a less hardy species. The study will thus throw a light on the actual mechanisms of evolution.

<u>U. S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	15,000
	FY 1972 est.	15,000

<u>116. Institution</u>	<u>Title of Project</u>
Office of Environmental Sciences Smithsonian Institution Washington, D. C.	"Cooperative Marine Research aboard the Smithsonian Research Vessel R/V <u>Phykos</u> "

Fourteen United States institutions have indicated an interest in conducting sampling programs in the Mediterranean Sea aboard the R/V Phykos, which would serve as a United States national vessel open to all United States marine research institutions, as a part of the UNESCO sponsored Cooperative Investigations of the Mediterranean (CIM), and the International Decade of Ocean Exploration (IDOE). Carefully controlled studies of a sea the size of the Mediterranean can provide useful information on the processes of life in all seas and more rapidly than attempts to study the oceans. Studies in the Mediterranean, moreover, can provide information on the process of pollution which has already altered the productivity of Lake Erie and the Baltic Sea to the disadvantage of man.

Oceanographic studies involve geological examination of the basins

holding the seas, as they now are and as they evolved over time. They involve also chemical studies of the waters of the sea and the origins of their chemicals or pollutants through the erosion and leaching of the land, through man's activities and through the decomposition of once-living things. Our limited knowledge of the seas requires that such studies begin with the identification of what lives there, where it is, in what relationships. Studies of changes in these patterns and of the effects of man's actions are dependent on these basic descriptive studies.

The Smithsonian proposes to plan R/V Phykos cruises, each involving scientists as they become available, from many United States research institutions, to provide guidelines which will serve to coordinate individual research projects, and to draw together the results to provide the most meaningful picture of the Mediterranean. The cruises will operate primarily with Yugoslav Dinar support, but Tunisia will also serve as an alternate port of call (see Item #112 above). An initial list of the interests of institutions proposing to participate follows:

--University of Southern California

Dredging, drilling to extract long cores, and grabbing samples from the sea bottom to study microscopic sea life and fossils of such life.

--National Museum of Natural History, Smithsonian Institution

Deep sea dredging to study recent changes in the distribution of life on the bottom of the sea through study of the changing shape of the highly adaptable animal, the ostracod, a microscopic shrimp like animal which has survived throughout most geological eras.

--Duke University, Durham, North Carolina

Bi-monthly cruises to collect samples for the study of the development, distribution and biology of crab larvae.

--Washington State University

Biological sampling for studies of the paleontology of Pteropods, a kind of snail. The study of the fossils of these animals is particularly important because, through geological time, they were carried over wide areas by ocean currents and thus their distribution reveals the changing shape of the ocean floor, the history of ocean currents and atmospheric conditions, and the directions of present-day continental drift.

--University of North Carolina

Isolation and study of pure cultures of marine fungi. Fungus thrives by living off of other living organisms and is of special importance because it attacks commercially useful marine life.

--National Museum of Natural History, Smithsonian Institution

Plankton tows for studies of planktonic foraminifera. The microscopic one-celled animals which float in the ocean are collected in fine nets towed behind research vessels. These animals form part of the broad base of the pyramid of life in the sea.

--Florida State University

Sampling for studies of deep sea biology and geology. The shape and make-up of the sea floor and the special forms of life which survive at great depths are the subject of these studies.

--University of Delaware

Towing plankton samplers to study the vertical distribution of cosmopolitan pteropods in relation to water masses. These animals are useful as indicators of varying oceanographic conditions like major currents like the Gulf Stream.

--University of California

Sampling deeper than 200 meters to describe and map the distribution of marine mites, scavengers living mostly near the shore.

--Division of Fishes, National Museum of Natural History, Smithsonian Institution

Long line fishing for several hundred specimens for a study of the distribution of the common sharksucker.

--University of North Carolina

Trawling, gill net, and long line collection of samples for systematic and distribution studies of sharks and their relatives.

--Department of Invertebrate Zoology, Smithsonian Institution

Mid-water trawling for studies of the systematics, distribution and ecology of pelagic Cephalopods, squids living in the open sea.

--Department of Paleobiology, Smithsonian Institution

Dredging, drilling to extract long cores and bottom photography to study the history of the ocean floor through study of the shape and composition of sediments and the sea bottom covered by the sediments.

--Massachusetts Institute of Technology

Deep lowerings of coring and grab sampling equipment for study of the deepest Mediterranean geological structures.

--Woods Hole Oceanographic Institution, Massachusetts

Submersible dives to explore the water transport over the Scarpanta sill in the Eastern Mediterranean. Sills limit the interchange of water and the life in it between basins in the sea.

--University of New Hampshire

Ecology of deep sea animals.

--Lamont-Doherty Geological Observatory, Columbia

Ecology of microscopic animals with skeletons.

--University of Georgia

Distribution of organic chemicals and trace elements which foster or limit plant and animal growth in the sea.

<u>U.S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est. 220,000
	FY 1972 est. 220,000
	FY 1971 231,500
	FY 1970 39,200

<u>117. Institution</u>	<u>Title of Project</u>
Dartmouth College Hanover, New Hampshire	"Studies of the Ecology of Lake Ohrid and its Drainage Basin"

This proposed study will examine the complex relationships among the activities of man, the animals, plants and fish as well as the geology of the drainage basin of Lake Ohrid in southern Yugoslavia. The lake has already been the site of basic descriptive studies of the fish and their evolution by the father of Yugoslav ecology Professor S. Stankovic, providing a firm base for studies leading to better management of man's environment.

<u>U.S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est. 100,000
	FY 1972 est. 10,000

<u>118. Institution</u>	<u>Title of Project</u>
Office of Environmental Sciences Smithsonian Institution Washington, D. C.	"A Cooperative Program in Environmental Management at Lake Skadar"

An aluminum plant is planned for construction in the drainage basin of Lake Skadar. A drainage tunnel is proposed to carry waters from the lake to the Adriatic Sea. Tourism is expanding and sport fishing is taking over larger numbers of fish from the lake. Basic studies are proposed of the current biological status of the lake as well as studies to monitor the impact of these man-made "disturbances" on the health of the area.

U. S. Dollar Equivalent in Yugoslav Dinars

FY 1973 est. 200,000

FY 1972 est. 10,000

119. InstitutionTitle of ProjectDuke University
Durham, North Carolina

"Conference on Larval Forms"

In studying many animals, particularly marine animals, it is not possible to limit investigations to adult forms of the animals owing to the fact that many animals pass through several stages in their life cycles, often markedly different. This conference aims to bring together specialists in larval forms of certain marine animals in order to compare knowledge and techniques. Publishable proceedings are expected to result.

U. S. Dollar Equivalent in Yugoslav Dinars

FY 1972 est. 30,000

120. InstitutionTitle of ProjectNational Museum of Natural History,
Smithsonian Institution
Washington, D. C."Population Dynamics of
Certain Ducks (Anatidae)
in Adriatic Nesting Areas"

The great water basins of Yugoslavia are rich with ducks. Up to 35 species are found at appropriate seasons of the year. However, both hunting and the encroachment of human development upon the nesting areas of these ducks is responsible for reduction in their numbers. This project is envisaged as part of an international effort to understand the distribution and behavior of these European ducks in order to suggest more rational means of protecting these economically important species.

U. S. Dollar Equivalent in Yugoslav Dinars

FY 1973 est. 20,000

121. InstitutionTitle of ProjectClark University
Worcester, Massachusetts"Marine Copepods in the Bay
of Trieste"

Marine copepods are small crustaceans which may prove to be significant, beyond the intrinsic interest of identifying the species and distribution of these animals, as indicators of the degree of pollution in certain waters. Heavily polluted waters have shown a certain density and distribution of these animals; the same holds true in less polluted waters, according to some previous studies, notably one carried out in the Lake of Tunis. This study aims to pursue the hypothesis that these small animals can be studied as one of the important indicators of the degree of pollution.

U. S. Dollar Equivalent in Yugoslav Dinars

FY 1973 est. 6,000

<u>122. Institution</u>	<u>Title of Project</u>
University of Michigan Ann Arbor, Michigan	"Interspecific Competition and Communication in Intertidal Hermit Crabs"

One of the insights of modern biology has been that species often compete for the same food and dwelling space. The species which excels at this sort of competition is likely to displace the species which is less efficient in this respect; this is one of the principal mechanisms of evolution. The study aims to document a particular instance of this competition between species in nature, in this case, two species of hermit crabs in Yugoslav waters. The study has not only theoretical implications for a better understanding of organic evolution, but will document the biology and distribution of the crabs being studied.

U. S. Dollar Equivalent in Yugoslav Dinars FY 1973 est. 7,440

<u>123. Institution</u>	<u>Title of Project</u>
University of Maine Farmington, Maine	"A Bat <u>Fauna</u> of Yugoslavia"

Bats have long been understood to be among the most important of species deserving study. Although they fly, they are not birds but mammals. In their adaption to their environment, their guidance systems seem to be equally important with their unusual (for mammals) methods of locomotion. This study will document the rich Yugoslav fauna of bats which is little known to American investigators working in the field.

U. S. Dollar Equivalent in Yugoslav Dinars FY 1973 est. 12,560

X. MULTI-COUNTRY BIOLOGY PROJECTS

a. On-Going and Pending Multi-Country Biology Projects

<u>124. Institution</u>	<u>Title of Project</u>
Library, Smithsonian Institution, Washington, D. C.	"Translation and Publications of Reference Works and Mono- graphs Through the National Science Foundation's Translation Program"

The science of other nations is frequently locked out of reach of United States' scholars because research results appear only in a foreign language. Wastful duplication often results and the insights of others are simply not available. Translation on a continuing basis of works appearing in other languages is therefore essential. Particularly important, for example, is the translation of the Flora of the USSR which can be of direct importance to a similar study in North America because the plants of the regions around the North

Pole are similar. The Smithsonian is able to contract for the translation of essential scientific works in one of the "excess currency" countries through a transfer of foreign currencies to the regular National Science Foundation scientific translation program.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	10, 000
	FY 1972 est.	10, 000
	FY 1971	10, 000
	FY 1970	5, 000
<u>U. S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	10, 000
	FY 1972 est.	10, 000
	FY 1970	10, 000
<u>U. S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	10, 000
	FY 1972 est.	10, 000
	FY 1970	10, 000

<u>125. Institution</u>	<u>Title of Project</u>
U. S. National Committee for the International Biological Program, National Academy of Sciences Washington, D. C.	"USIBP Training, Symposia, and Research Development in the ' Excess Currency' Countries"

The International Biological Program seeks to promote the study of nature's productive process particularly by focussing talent and money on problems which can not readily be studied in any one nation. The U. S. contribution is a series of complex studies of entire climatic regions like temperate forests and grasslands or tropical forests or deserts. Studies initiated in the U. S. are of substantially greater value if they can be compared with carefully prepared parallel studies in other parts of the world. Smithsonian PL-480 funds have contributed to the development of a number of such parallel studies. The first such study is at present under review by the Smithsonian's Foreign Currency Program. It is called "Systems Analysis of the Pre-Saharan Ecosystem of Southern Tunisia" and is comparable to the desert studies being pursued in the U. S.

<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	20, 000
	FY 1972 est.	20, 000
	FY 1971	10, 000
<u>U. S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	20, 000
	FY 1972 est.	20, 000
	FY 1971	10, 000
<u>U. S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	20, 000
	FY 1972 est.	20, 000
	FY 1971	10, 000

C. ASTROPHYSICS AND EARTH SCIENCESI. EGYPTa. On-Going and Pending Astrophysics and Earth Sciences Projects in Egypt

<u>126. Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory, Cambridge, Massachusetts	"Research in Theories of Planetary Motion"

This project involves the use of computer facilities already existing in Egypt to test a theory which may better explain the movements of the planets in our solar system, including the motion of the earth. This is a cooperative venture between American and Egyptian scientific investigators.

<u>U. S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973 est.	20,000
	FY 1972 est.	20,000
	FY 1971	23,634

b. New Astrophysics and Earth Sciences Projects in Egypt

<u>127. Institution</u>	<u>Title of Project</u>
University of Texas Austin, Texas	"Libyan Desert Glass Occurrence"

Tektite, or natural "glass", occurs many places in the world, and theories vary whether the origin of this glass comes from impact, fusion at high temperatures, volcanic action, or even from an extraterrestrial source such as meteorites. In one of the most remote areas on the face of the earth--the region near the borders of Egypt, Libya, and the Sudan--tektites are strewn over a broad region. This project, in cooperation with the Egyptian Geological Survey, will pay one or several visits to the area, as needed, in an attempt to establish the nature and origin of this Libyan Desert "glass".

<u>U. S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973 est.	22,193
	FY 1972 est.	2,391

II. INDIAa. On-Going and Pending Astrophysical and Earth Sciences Projects in India

<u>128. Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory, Cambridge, Massachusetts	"Multi-color Photoelectric Observations of Flare Stars at the Uttar Pradesh State Observatory"

Flare stars are stars discovered relatively recently which produce irregular increases in surface brightness for a few seconds. Such flares show similarities with those on the surface of our sun, though some are considerably more luminous. This study will assist in determining the causes of these currently little understood flares.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	12, 000
	FY 1972 est.	9, 000
	FY 1971	9, 000

129. InstitutionTitle of Project

Harvard University and
Smithsonian Astrophysical
Observatory
Cambridge, Massachusetts

"Thermal Emission and
Absorption of Diatomic
Molecules"

This study aims to determine the physical constituents of late-type stars. By reproducing in the laboratory what they think is happening on the star, and observing the corresponding lines in the spectrum produced by each type of molecule, astronomers are then able to confirm the existence of given molecules by looking at the spectrum produced by the star in nature. Diatomic molecules are molecules consisting of two atoms. Some of the chemical elements common on the earth are composed of this type of molecule.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	20, 000
	FY 1972 est.	20, 000

130. InstitutionTitle of Project

Smithsonian Astrophysical
Observatory,
Cambridge, Massachusetts

"Studies in Geodesy, Geophysics,
and Celestial Mechanics at the
Naini Tal Observing Station "

This project is intended to continue, using foreign currencies, a program of cooperation between the Smithsonian Astrophysical Observatory and the Naini Tal Observing Station in India that has gone on since 1958. Naini Tal has served as one of SAO's global network of stations tracking satellites for NASA. The SAO tracking effort has already resulted, for example, in data which provide a mathematical description of this planet's deviations from a perfect sphere as well as much of what is known of atmospheric densities above 200 km.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	20, 000
	FY 1971	2, 000

131. InstitutionTitle of Project

University of Hawaii
Honolulu, Hawaii

"Gravity Studies in India"

Studies of the force of gravity in various parts of the earth show variations. Measurement of these variations makes possible interpretation of the composition and density of the materials beneath the surface of the

earth, and are thus an important element in the exploration for oil and minerals. These explorations are especially important in a developing country such as India. In addition, India is an area where data are deficient which would contribute to the world-wide tabulation of data on the solid-earth environment. The data to be collected during this study would help to fill important gaps in global gravity data.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	20,000
	FY 1971	2,000

132. <u>Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory Cambridge, Massachusetts	"Atmospheric Measurements Through Radio Tropospheric Scatter Techniques"

The Troposphere is a layer of the earth's atmosphere below the stratosphere, about 7 to 10 miles above the surface of the earth, where temperature decreases rapidly with altitude. In this study, radio signals will be sent between two different points in India; as these signals pass through the troposphere its properties will become better understood by its effects on the radio waves. This study will yield data on how the troposphere refracts (or bends) the waves, on atmospheric layer formation, and on wind speeds at these levels. This data can result in significant improvement of the operation of the Smithsonian Astrophysical Observatory's Satellite Tracking System.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	20,750
	FY 1972 est.	20,300
	FY 1971	1,500

133. <u>Institution</u>	<u>Title of Project</u>
University of California San Diego, California	"The Effects of Cosmic Rays on Terrestrial and Extra- Terrestrial Materials"

In the atomic age the effects of radioactivity have become well known; the rate at which radioactive materials change into inert, stable materials can be measured, and hence the amount of stable material in a given substance provides information about its age--how long it has taken the radioactive material to change into inert material at the known rate of change. This study aims to look at radiation effects in substances both from outside the earth's atmosphere (meteorites) and those recovered from the earth (geological and archeological specimens) in an effort both to determine other effects of radiation. The kinds of analysis contemplated are similar to many of the studies which have been made of lunar samples brought back to the earth by the American Astronauts.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	8,000
	FY 1972 est.	4,000

<u>134. Institution</u>	<u>Title of Project</u>
Harvard University Cambridge, Massachusetts	"Studies of the Excitation Processes in Stellar, Planetary and Cometary Atmospheres"

The processes which produce "excitation," or release of energy, provide important information about the processes going on in the atmospheres of stars, planets, and comets. This is a laboratory study which will simulate processes believed to be taking place in different celestial atmospheres; the results obtained can then be compared with what is actually happening in nature.

U. S. Dollar Equivalent in Indian Rupees FY 1973 est. 41,700

b. New Astrophysics and Earth Sciences Projects in India

<u>135. Institution</u>	<u>Title of Project</u>
Iowa State University Ames, Iowa	"Stratigraphy and Geology of Siwalik Deposits"

The Siwalik hills of Northwest India are famous for their fossil-bearing beds. Some of the major discoveries of modern paleontology have come from these fossil-bearing strata. The present project aims to increase our knowledge of the stratigraphy and geology of these hills. The Principal Investigator has had experience, having served as a staff geologist on a Yale University expedition which discovered major primate fossils in the Siwalik Hills several years ago.

U. S. Dollar Equivalent in Indian Rupees FY 1973 est. 30,000

III. ISRAEL

a. On-Going and Pending Astrophysics and Earth Sciences
Projects in Israel

<u>136. Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory Cambridge, Massachusetts	"An Astronomical Observing Program in Israel"

This observing program in Israel will accumulate valuable data gathered at the same latitude and approximately half way around the world from the U. S. which can be profitably compared with similar data gathered by observatories in the Western Hemisphere. The location of comparable observing programs in Israel and the United States makes possible continuous observation of certain celestial phenomena as the earth rotates. Individual projects included in the program, on which a number of United States institutions will co-operate with the Smithsonian, are set forth separately, as follows:

- a) U. S. Navel Research Laboratory, Washington, D. C. and Massachusetts Institute of Technology "To Conduct Optical and Photoelectric Monitoring of X-ray Sources"

Certain types of stars and other heavenly bodies emit x-rays. This study aims to photograph selected sources of these rays and measure the intensity of the light they produce. Normally these types of x-rays do not penetrate the earth's atmosphere and are therefore studied through artificial satellites. This study will make observations at the same time as the satellites and the two observations can then be compared, resulting in a more accurate knowledge of the physical processes involved.

- b) California Institute of Technology "To Conduct Photoelectric Monitoring of the Continuum and Line Emission from Quasi-Stellar Objects (QSO) and the Nuclei of N-Type Galaxies"

Photoelectric monitoring involves the measurement of light intensity electrically. Light intensities are measured as they appear in the colored bands contained in the spectra produced by given celestial bodies. Quasi-stellar objects (often called quasars) are highly compacted bodies, first discovered as the sources of radio emissions. By measuring the light intensities in the spectra produced by these bodies we learn more about the nature of the physical processes involved in these unusual conglomerations.

- c) Smithsonian Astrophysical Observatory "To Conduct a High-Dispersion Abundance Analysis of Stars in the Pleiades"

Abundance analysis involves determination of the relative quantities of chemicals to be found in given types of heavenly bodies. The Pleiades is a typical star cluster. It is now assumed that the formation of all the stars in a cluster does not take place at the same time, but may be spread out over intervals of about ten million years; and it is also assumed that those stars formed earliest would be on the outskirts of the cluster. By examining the chemical elements in different stars of the cluster, this study will be able to test this hypothesis.

- d) State University of New York at Stony Brook "To Determine the Rate of Star Formation in Young Clusters"

Using photoelectric measurements, this study aims to calculate the age of individual stars in star clusters from which the rate of star formation can be determined. The study will also measure the velocity of rotation of each star and determine how that velocity changes with the age of the star. It is believed that sudden changes

in the star's rotation velocity could indicate that planets are being formed (any star throwing off planets would tend to slow down, in accordance with the laws of physics.)

e) Harvard College Observatory Cambridge, Massachusetts	"To Conduct Photometric Observations of the High Balmer Lines (Near the Balmer Limit) and the Balmer Continuum in Planetary Nebulas"
--	--

The series of lines in the spectrum which are produced by hydrogen are called Balmer Lines. The present study aims to resolve, by the analysis of these lines of the spectrum, the divergent results which have been obtained in the study of these nebulas by radio and by optical means.

<u>U. S. Dollar Equivalent in Israeli Pounds</u>	FY 1972	70, 000
	FY 1971	142, 990
	FY 1970	275, 200

<u>137. Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory, Cambridge, Massachusetts	"A Study of the Collective Behavior of Self-Gravitating Systems"

This is a mathematical study being conducted with Israeli astronomers which attempts to understand the mathematical laws governing the evolution of galaxies, and why star systems like the one including our own earth do not collide.

<u>U. S. Dollar Equivalent in Israeli Pounds</u>	FY 1971	15, 270
	FY 1970	13, 450
	FY 1969	5, 400
	FY 1968	41, 810

<u>138. Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory	"The Construction of Stellar Models of Evolving Stars"

This is a cooperative study with Israeli astronomers which is concerned with the life and death cycles of stars of varying sizes. Through such research may come the science needed to predict the future of our own sun, upon whose stable energy output we are totally dependent.

<u>U. S. Dollar Equivalent in Israeli Pounds</u>	FY 1971	13, 880
	FY 1970	11, 200
	FY 1969	27, 270

IV. PAKISTAN

- a. On-Going and Pending Astrophysics and Earth Science Projects
None
- b. New Astrophysics and Earth Sciences Projects in Pakistan

<u>139. Institution</u>	<u>Title of Project</u>
University of Hawaii Honolulu, Hawaii	"Compilation of Surface Geophysical Data on a National Level"

The preliminary to any type of research is the compilation of data already existing. This project aims to compile, supplement where necessary with direct observation and integrate the various available geophysical data on Pakistan. This data will be correlated to existing satellite geophysical data. The result will be of considerable benefit in the planning and utilization of natural resources.

U.S. Dollar Equivalent in Pakistani Rupees FY 1963 est. 30,000

V. POLAND

- a. On-Going and Pending Astrophysics and Earth Sciences Projects in Poland

<u>140. Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory Cambridge, Massachusetts	"Solar Radiation Pressure Perturbations upon the Passive Geodetic Earth-Orbiting Satellite(PAGEOS)"

Passive Geodetic Earth-Orbiting Satellite (PAGEOS) is actually a large balloon which was lifted into orbit in 1966. This satellite, being both large and light in weight, is very sensitive to changes in solar radiation. By means of this project it is hoped to utilize some of the considerable expertise in this field which already exists in Poland in the analysis of data obtained by PAGEOS. Polish scientists have been pre-eminent in astronomy and astrophysics since the time of Copernicus and cooperative projects in Poland are expected to be especially valuable.

U.S. Dollar Equivalent in Polish Zolties FY 1973 est. 72,000

<u>141. Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory	"Air Glow and Ionospheric Characteristics at the Magnetic Equator"

Air glow is the faint illumination in the night sky caused by certain physical processes in the upper atmosphere. The ionosphere is a layer of the upper atmosphere consisting of ionized atoms (ions are

atoms with missing electrons). Radio waves are directed into the ionosphere and are reflected back by the ionosphere; in the process the properties of the ionosphere, through which artificial satellites must pass into outer space, are better understood.

U.S. Dollar Equivalent in Polish Zloties FY 1973 est. 18,000

b. New Astrophysics and Earth Sciences Projects in Poland

142. <u>Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory	"Geophysical Studies Employing Long Base-Line Interferometry Techniques"

"Very long base line interferometry" refers to measurements made simultaneously from two different points, say, from a station in Poland and another one in America. Such observations taken from different points reveal important facts about continental drift, polar wandering, and satellite tracking. Facts about the earth's deviation from a true sphere can also be ascertained in this fashion.

U.S. Dollar Equivalent in Polish Zloties FY 1973 est. 46,000

143. <u>Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory	"The Nature of Stellar Atmospheres"

All stars have atmospheres consisting (as in the case of our sun) of mostly hydrogen, helium, and some other elements. This study aims to utilize the considerable Polish astronomical expertise in this field in obtaining new knowledge about the nature of the atmospheres of particular stars and how they differ from those of other stars and from the atmosphere of our sun.

U.S. Dollar Equivalent in Polish Zloties FY 1973 est. 30,000

144. <u>Institution</u>	<u>Title of Project</u>
Smithsonian Astrophysical Observatory	"Contributions to the International Satellite Geodesy Experiment"

The International Satellite Geodesy Experiment is a cooperative international program of satellite observation which is engaged in studies seeking to determine the true shape of the earth. A number of countries, including Poland, are tracking the same satellites being tracked by the United States. This project aims to exchange and analyze comparative data gathered in the course of these satellite-tracking efforts.

U.S. Dollar Equivalent in Polish Zloties FY 1973 est. 30,000

VL TUNISIAa. On-Going and Pending Astrophysics and Earth Sciences Projects in Tunisia

145. <u>Institution</u>	<u>Title of Project</u>
Duke University Durham, North Carolina	"Sedimentation Studies at Bahiret El Bibane on the Tunisian Coast"

Sedimentation, the process by which many of the geological strata under the earth were formed, is a process which is still going on today. A lagoon located in South Tunisia affords an unusual opportunity to study the process. An understanding of sedimentation and sedimentary strata already formed in the geological past is indispensable for any systematic exploration for oil or minerals beneath the surface of the earth. The Principal Investigator hopes to obtain data which can be compared with data already gathered in the Bahamas.

<u>U. S. Dollar Equivalent in Tunisian Dinars</u>	FY 1973 est. 10,000
	FY 1972 8,794

b. New Astrophysics and Earth Sciences Projects in Tunisia

146. <u>Institution</u>	<u>Title of Project</u>
Case Western Reserve University Cleveland, Ohio	"Paleomagnetic Research on the Permian and Triassic Ages in Tunisia "

So-called "red beds" from the Permian and Triassic geologic ages in Tunisia are considered important in filling in the total picture of the past geologic ages of the earth. Collections are contemplated which would complement and complete work already done on this age by the Principal Investigator.

<u>U. S. Dollar Equivalent in Tunisian Dinars</u>	FY 1973 est. 42,000
---	---------------------

VII. MULTI-COUNTRYa. On-Going and Pending Multi-country Astrophysics and Earth Sciences Projects

147. <u>Institution</u>	<u>Title of Project</u>
Center for Short-Lived Phenomena Smithsonian Institution Washington, D.C. and Cambridge, Massachusetts	"Excess Currency Support for the Center for Short-Lived Phenomena"

The Center for Short-Lived Phenomena is a clearing house for the receipt and dissemination of information concerning rare or infrequent natural events that might otherwise go unobserved or uninvestigated: remote volcanic eruptions, the birth of new islands in the ocean, the fall of meteorites, large fire balls, sudden changes in biological or ecological systems, and so on. With today's concern for the natural environment, the Center for Short-Lived Phenomena serves an indispensable need of the entire American scientific community, since it collects and disseminates information about natural events while they are happening and makes it possible in many cases for scientists throughout the country to study them while they are happening. The utility of this is obvious in the case of phenomena such as erupting volcanoes, tidal waves, plagues of locusts, and similar occurrences which can have such a drastic impact on man and his environment. If the nature of some of these phenomena were better understood preventive measures could be more readily applied.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	3,000
	FY 1972	3,000
<u>U.S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	3,000
	FY 1972	3,000
<u>U.S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	3,460

D. MUSEUM PROGRAMS

I. EGYPT

a. On-Going and Pending Museum Programs in Egypt

None.

b. New Museum Programs in Egypt

<u>148. Institution</u>	<u>Title of Project</u>
United States National Museum Smithsonian Institution Washington, D. C.	"Film Documentation of Field Expeditions."

Most of the projects funded by the Smithsonian Foreign Currency Program are involved in one way or another with the collection of data. A neglected aspect of documentation in this age of the media has been the recording of essential aspects of field projects on film. Because of its variety of highly visible archeological projects, Egypt has been selected for a pilot project of filming various aspects of a number of Smithsonian-supported field projects. The resulting film will be retained not merely as essential project documentation--much as field notes, drawings, maps, and still photographs are regularly retained as project documentation--but also for use in public education programs in the Smithsonian and other museums and also in the schools.

<u>U.S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973	50,000
--	---------	--------

II. INDIAa. On-Going and Pending Museum Programs in India

<u>149. Institution</u>	<u>Title of Project</u>
United States National Museum Smithsonian Institution Washington, D. C.	"Development of a Teaching Museum of Science and Technol- ogy."

The purpose of this project is to assist, under the U.S. National Museum Act, with museum expertise and support the program of the International Council of Museums (ICOM), a UNESCO affiliate, to develop teaching museums of science and technology in Asia and Africa. For example, the Smithsonian contributed in FY 1969 to studies resulting in recommendations to ICOM that there be established in India a laboratory for basic exhibits in science and technology where teaching exhibits will be built for circulation in industrializing countries. The experiment will provide opportunities to American museum specialists to observe the effectiveness of exhibits in teaching basic science and technology to people of all cultural backgrounds.

This project grew out of a resolution of the UNESCO affiliated International Council of Museums to establish a regional museum laboratory to design and produce teaching exhibits needed by developing countries. This laboratory would develop exhibits which for example, would graphically show semi-literate agricultural populations the effect on crops of new techniques as compared to traditional methods. Participating American museum specialists would evaluate the effectiveness of various museum techniques in teaching basic science to people of varying cultural backgrounds who are in the process of developing and improving their societies and ways of doing things.

<u>U.S. Dollar Equivalent in Indian Rupees</u>		
	FY 1973	80,000
	FY 1971	3,554
	FY 1970	13,450
	FY 1969	5,400
	FY 1968	41,810

<u>150. Institution</u>	<u>Title of Project</u>
Smithsonian Institution Traveling Exhibition Service (SITES) and the Smithsonian's National Collection of Fine Arts (NCFA) Washington, D. C.	"Preparation of an Exhibit Catalogue for a Unique Collection of Indian Paintings of the Moghul Period."

SITES gathers exhibitions from the United States and abroad and circulates them at cost to American museums and other institutions. One of the objectives of SITES is to bring to the United States exhibitions of art and other cultural manifestations of foreign lands which would otherwise be little known to us. One such project would be the bringing of the great collection of miniature paintings from the Moghul period and related items

from the pre-British Muslim monarchies of India, from the museum of Benares Hindu University to the United States. The Special Foreign Currency Program support would be applied to the curatorial research and preparation of a scholarly catalogue of the collection. American museums throughout the country are interested in present exhibitions such as this which they could not easily obtain except through SITES.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	5,000
	FY 1972 est.	5,000

b. New Museum Programs in India

151. <u>Institution</u>	<u>Title of Project</u>
Division of Performing Arts	"Live Performances of Traditional
Smithsonian Institution	Indian Performing Arts by Indian
Washington, D. C.	Artistic Troupes."

The Smithsonian's Division of Performing Arts has become justly famous for making better known living examples of American traditional songs and dances, notably through its annual Festival of Folk Life held on the Mall of the nation's capital around July 4 each year. It is proposed in this project to bring to America for live performances troupes of Indian artists capable of making India's traditional song and dance live here. Such troupes would be able to support themselves through engagements in this country. The funds requested here would be used to locate in India suitable troupes and to make appropriate arrangements there for the particular performances wanted and to bring the groups to America.

<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	10,000
--	--------------	--------

III. PAKISTAN

a. On-Going and Pending Museum Programs in Pakistan

None.

b. New Museum Programs in Pakistan

152. <u>Institution</u>	<u>Title of Project</u>
Smithsonian Institution Traveling	"An Exhibition of Pakistani
Exhibition Service	Ethnographic Materials and
Washington, D. C.	Accompanying Scholarly
	Catalogue."

It is proposed that SITES circulate examples of the traditional arts and crafts of Pakistan. This project would support the preparation of a catalogue to accompany the circulating exhibition and would support the curatorial work required to select and describe the materials to be included. This exhibit would be presented by a number of American museums around the country.

<u>U.S. Dollar Equivalent in Pakistani Rupees</u>	FY 1973 est.	20,000
---	--------------	--------

IV. POLANDa. On-Going and Pending Museum Programs in Poland

<u>153. Institution</u>	<u>Title of Project</u>
National Museum of History and Technology Smithsonian Institution Washington, D. C.	"Preparation of Ethnographic Materials to Supplement National Collections."

The Smithsonian was given last year a small collection of ethnographic materials (Costumes, household objects, etc.) by the Polish Embassy at Washington. The Polish Embassy has offered to expand this collection to make it suitable for circulation by SITES, and thus make it available to many other American museums; and also for study by the Museum of History and Technology. This project would provide support for a curator to study and collect in Poland the necessary materials to augment the basic collection and to transport these materials and those provided by the Government of Poland to the Smithsonian.

U.S. Dollar Equivalent in Polish Zloties FY 1973 est. 10,000

b. New Museum Programs in Poland

<u>154. Institution</u>	<u>Title of Project</u>
National Museum of History and Technology Smithsonian Institution Washington, D. C.	"Ethnographic Collections for U.S. Bicentennial Exhibits Based on the Culture of Immigrant Americans."

As a part of the preparations for the U.S. Bicentennial exhibitions, the Museum of History and Technology will be preparing studies of the principal cultures of origin of immigrant Americans and making collections of ethnographic materials illustrating this cultural heritage. Studies and collections from Poland would be supported by the Special Foreign Currency Program.

U.S. Dollar Equivalent in Polish Zloties FY 1973 est. 5,000

V. YUGOSLAVIAa. On-Going and Pending Museum Programs in Yugoslavia

None

b. New Museum Programs in Yugoslavia

<u>155. Institution</u>	<u>Title of Project</u>
National Museum of History and Technology Smithsonian Institution Washington, D. C.	"Ethnographic Collections for U.S. Bicentennial Exhibits Based on the Culture of Immigrant Americans."

As a part of the preparations for the U.S. Bicentennial exhibitions, the Museum of History and Technology will be preparing studies of the principal cultures of origin of immigrant Americans and making collections of ethnographic materials illustrating this cultural heritage. Studies and collections from Yugoslavia would be supported by the Special Foreign Currency Program.

<u>U.S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973	5,000
--	---------	-------

VI. MULTI-COUNTRY

a. On-Going and Pending Multi-Country Museum Programs

<u>156. Institution</u>	<u>Title of Project</u>
United States National Museum, Smithsonian Institution, and American Association of Museums Washington, D. C.	"A Program of Professional Museum Exchanges."

The purpose of this project is to initiate a program of professional training for museum curators and technicians in collaboration with museums of India, Pakistan, Poland and Egypt, through two-way exchanges of personnel for on-the-job training. Participants would be expected to serve at least six months in a museum housing collections of direct importance to their professional development.

<u>U.S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973 est.	20,000
	FY 1972 est.	15,540
<u>U.S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	25,000
	FY 1972 est.	25,000
<u>U.S. Dollar Equivalent in Pakistani Rupees</u>	FY 1973 est.	10,000
<u>U.S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	20,000
	FY 1972 est.	14,460

E. GRANT ADMINISTRATION

157. <u>Institution</u>	<u>Title of Project</u>
Office of International Activities Foreign Currency Program Smithsonian Institution Washington, D. C.	"To Defray Costs of Grant Administration Payable in Foreign Currencies."

In order to administer a national program of grants for research which is entirely conducted overseas, there is an irreducible minimum amount of time which must be spent on the ground in the countries abroad by program personnel. The program endeavors to keep administrative costs to a minimum but some are unavoidable. Some of the costs shown represent dollar savings (for example, for audit), since if the work were not done abroad at a cost in foreign currencies, it would have to be done in the U. S. at dollar cost. Administrative costs have remained a small percentage of the total program appropriation. For example, in Fiscal Years 1968, 1969, and 1970, when the appropriation remained constant at 2,316,000, the foreign currency costs for grant administration were 10,000, 15,000 and 20,000 respectively. A breakdown for costs and estimated costs for Fiscal Years 1971, 1972, and 1973, is as follows:

<u>U. S. Dollar Equivalent in Egyptian Pounds</u>	FY 1973 est.	3,000
	FY 1972 est.	3,000
<u>U. S. Dollar Equivalent in Indian Rupees</u>	FY 1973 est.	6,000
	FY 1972 est.	6,000
	FY 1971	8,000
<u>U. S. Dollar Equivalent in Israeli Pounds</u>	FY 1971	1,000
<u>U. S. Dollar Equivalent in Moroccan Dirhams</u>	FY 1971	1,000
<u>U. S. Dollar Equivalent in Pakistani Rupees</u>	FY 1973 est.	3,000
	FY 1972 est.	3,000
<u>U. S. Dollar Equivalent in Polish Zloties</u>	FY 1973 est.	3,000
	FY 1972 est.	3,000
<u>U. S. Dollar Equivalent in Yugoslav Dinars</u>	FY 1973 est.	6,000
	FY 1972 est.	6,000

OFFICE OF INTERNATIONAL ACTIVITIES

Senator BIBLE. How many hard dollars does this take?

Mr. WARNER. All the hard dollars we spend are in the Office of International Activities carried earlier in the budget; that is, the Office of International Activities, which has a staff of nine positions which is found on page 50 of the budget, sir.

Senator BIBLE. How many people is that again?

Mr. WARNER. Nine.

RESTORATION AND RENOVATION OF BUILDINGS

Senator BIBLE. For restoration and renovation of buildings you propose a budget of \$5,409,000, an increase of \$4,859,000 over last year's appropriation. The justification for this estimate will be placed in the record.

(The justifications follow:)

RESTORATION AND RENOVATION OF BUILDINGS

1971 Appropriation.....	\$1,725,000
1972 Appropriation.....	\$ 550,000
1973 Estimate.....	\$5,409,000

An appropriation of \$5,409,000 is requested for the following projects:

Arts and Industries Building air conditioning and renovation	\$3,500,000
Storage building for National Air and Space Museum	125,000
Mt. Hopkins, Arizona, Observatory road and power improvements	220,000
National Portrait Gallery third floor renovation	250,000
Chesapeake Bay Center for Environmental Studies research facilities	50,000
Smithsonian Tropical Research Institute facility repairs	35,000
Library collection and work spaces	100,000
General building repairs and improvements	779,000
National Museum of History and Technology library addition planning	250,000
Feasibility studies (parking and National Museum of Natural History Research Center)	<u>100,000</u>
Total	\$5,409,000

Arts and Industries Building

An appropriation of \$3,500,000 is requested for the major restoration and improvement of the Arts and Industries Building, for use for "The Year of the Centennial". This will be a major exhibition, recreating in many details the distinctive flavor of American life at the time of the Centennial Exposition of 1876. The Smithsonian will develop an exhibition, using many of the objects acquired after the Centennial Exposition of Philadelphia in 1876, to evoke the world of 1876, the atmosphere and style of our nation midway between its founding and its 200th birthday. It is estimated that four million persons would visit this building in the Bicentennial year.

The building, described as Modern Romanesque, was constructed in 1880. It has been declared a "Landmark of Importance" by the Joint Landmarks Committee of the National Capital Planning Commission and the Commission of Fine Arts. It is a one-story brick structure with 163,000 square feet of floor space. Partial second floor levels have been constructed

and a mezzanine borders the east, west, and south halls. Four additional second floor areas are now under construction, using funds appropriated in FY 1971. The four main halls are in the form of a cross with the rotunda located at the center. These main halls combined with the adjoining smaller exhibit spaces on the main floor provide 80,000 square feet of extremely adaptable space with the ceiling heights ranging from 14 feet under the galleries to 42 feet in the main halls.

The large open areas of the building, free of structural or architectural interferences, combined with high ceilings, arched openings, and the overall spaciousness, established the "Exposition" character of the structure. The decision of the Board of Regents of the Smithsonian to use the major portion of this building for exhibition purposes presents an unparalleled opportunity to display industrial, technological, architectural, scientific, and other large-scale exhibits which cannot be accommodated by other museum buildings. The location of this significant and unique building on the Mall adjacent to other buildings of the Smithsonian Institution provides a convenient and accessible facility for the visiting public.

The funds requested will be used for the installation of heating, ventilating, air conditioning, and humidity control systems for the entire building and for special equipment, fixtures, furnishings, floor coverings, decorative treatments, and lighting. The proper preservation and conservation of museum objects for the future cannot be satisfactorily accomplished except by the installation of the proposed systems. This long overdue improvement will also provide comfort for visitors and staff.

The rotunda and four main exhibition halls will be restored to the 1876 appearance; severely needed public restrooms will be installed; obsolete and potentially hazardous electrical and utilities systems will be replaced; the west entrance will be opened to give visitors access to the area south of the Smithsonian Institution Building; and related improvements will be accomplished to provide convenience, utility, and safety.

The cost estimate includes the following:

<u>Estimated Renovation Costs</u>	<u>Amount</u>
Construction contracts and contingencies	\$2,694,000
Reservations (special equipment, fixtures, furnishings, floor coverings, decorative treatments, and lighting, etc.)	545,000
<u>Estimated Services (GSA)</u>	
GSA design contract review	\$12,000
Duplication, bids, etc.	20,000
Engineering and design completion	75,000
Construction supervision	<u>154,000</u>
	<u>261,000</u>
Total Renovation Costs	\$3,500,000

With this appropriation, the project can be started at the beginning of FY 1973 and the work can be completed in sufficient time for the installation of the special exhibitions for the Bicentennial Celebration in 1976.

Storage Building for the National Air and Space Museum

An amount of \$125,000 is requested for the construction of a 20,000 square-foot prefabricated steel storage building, to be located at the Silver Hill Facility, Silver Hill, Maryland, for the use of the National Air and Space Museum.

At the present time, there are 42 aircraft in outdoor storage at Silver Hill. Of this number, 26 are partially disassembled and crated in 97 large boxes. In addition, there are 50 large space artifacts, and approximately 100 aircraft engines also in outdoor storage. This type of storage cannot prevent further deterioration and will result in costly restoration if continued.

Although one additional building will not completely solve this unsatisfactory outdoor storage, it will provide space for these items in immediate need of adequate protection from the elements, and for those items requiring restoration for display in the new Air and Space Museum.

Mt. Hopkins Observatory Power and Road Improvements

An appropriation of \$220,000 is requested for correction of deficient power supply and road conditions at Mt. Hopkins, Arizona. As the Smithsonian Astrophysical Observatory's Mt. Hopkins facility develops, the demands on the electrical power system must be accommodated. For the protection and proper operation of the expensive and sophisticated electronic instrumentation now coming into use, the antiquated electrical power distribution systems must be improved.

In FY 1971, engineering studies were initiated to determine the appropriate power system for Mt. Hopkins. During FY 1972, a final system design will be completed, enabling installation to be undertaken in FY 1973. This cost, estimated by a local power company, is \$120,000.

For the safety of its staff, and others who must travel to and from the Mt. Hopkins facility, it is also necessary to improve the pioneer access road. Although usable during the initial construction of the Observatory, the road now presents a daily hazard to all users with its narrow hairpin turns, poor surface, and inadequate drainage.

The initial improvements to the Mt. Hopkins road will consist of replacement of gravel in badly worn areas, hard-topping of selected sections where dust or moisture is particularly troublesome, and widening and regrading of narrow turns and areas where drainage problems exist. These costs are estimated at \$100,000.

National Portrait Gallery Third Floor Renovation

An appropriation of \$250,000 is requested for the renovation of the Great Hall on the third floor of the Gallery in order that it can be used for the public display of expanding permanent collections, as well as for special loan exhibitions. It is not always possible or desirable to exhibit all portraits at the same time. A study-storage area is needed so that such portraits can be available to be conveniently viewed upon request at all times, and for study areas for visiting scholars and members of the Gallery

staff working on special research projects which will be expanding considerably, especially in connection with projected exhibitions and publications celebrating the Bicentennial of the American Revolution. This renovation will include overhead lighting above the skylight of the Great Hall to provide effective illumination for this historic interior space, now considerably darker than adjacent gallery areas, flexible museum lighting for exhibition purposes, and appropriate fixtures for study-storage and work areas.

In addition to making it possible for the National Portrait Gallery to make full use of this already extant space, these changes will enhance the public appreciation of one of the most striking interior spaces in the nation, a renowned example of the Nineteenth Century American Renaissance Style, once the largest room in the United States.

The National Portrait Gallery Commission is particularly anxious that this vast and magnificent area not be wasted when the public interest in this historic chamber and the Gallery's practical need for it are so apparent. The estimated costs are based on a study by a consultant who has been responsible for much of the most recent relighting of the Capitol, as well as for the new wing of the Museum of Fine Arts in Boston.

Chesapeake Bay Center for Environmental Studies (CBCES) Research Facilities

An appropriation of \$50,000 is requested to improve the facilities at the Chesapeake Bay Center for staff and visiting scientists.

In order to provide badly needed research space, CBCES must renovate the existing two-story, roofless barn. This renovation will include electrical, sewage, and water services; repairs to the building such as a new roof, stairways, interior partitions, resilient tile floor covering, lighting, doors and hardware, interior and exterior painting; and the installation of a heating and ventilating system. Special needs would consist of the installation of laboratory sinks, base and wall cabinets, and surfaces suitable for general laboratory usage. These costs are estimated at \$30,000.

It is also important to begin construction of a small dormitory facility to house visiting researchers. At the present time, this is accomplished in an inadequate manner by preempting space in the main office building ordinarily used for administrative activities. This facility would be a modular-type prefabricated building of approximately 1,400 square feet of floor space, on a preconstructed foundation with electrical, sewage, and water services. Special needs would consist of kitchen equipment, furniture, and furnishings suitable for a dormitory building. These costs are estimated at \$20,000.

Smithsonian Tropical Research Institute Facility Repairs

An appropriation of \$35,000 is requested for laboratory building and other facility repairs. For over 40 years a number of frame shelters have been maintained on Barro Colorado Island to provide work space and living facilities for scientists working on the Island. Despite modern methods of wood treatment, partial replacement of these facilities has been a continual need due to termite and ant infestation and deterioration in the humid tropical environment. Large scale use of insecticides in this area would be detrimental to research efforts performed on the Island.

Despite logistical and construction problems, future structures on Barro Colorado Island will incorporate masonry materials to the fullest extent practical. However, a minimal amount of \$30,000 is needed to repair the existing structures in order to continue their useful life. An additional \$5,000 is requested to repair the large marine research pier at the Naos Island installation.

Library Collection and Work Spaces

An appropriation of \$100,000 is requested to continue a program started in the FY 1971 budget to improve spaces in Smithsonian Institution buildings for the proper care and accessibility of library materials. In FY 1971 \$50,000 were appropriated for such improvements in the Natural History Building and in FY 1972 \$25,000 for the Lamont Street Building.

The FY 1973 funding would be used for three projects with approximate allocation as follows:

--\$60,000 for the double-decking, remodeling, and outfitting of reference and reading space in the Natural History Building to complete the project initiated with the FY 1971 appropriation. Double-decking of cataloging space will be accomplished with that appropriation. This is the Central Library as well as the library for the National Museum of Natural History.

--\$20,000 for improving space in the History and Technology Building to accommodate stacks and reading area.

--\$20,000 for converting space and providing built-in and other special equipment to maintain controlled conditions for valuable rare books.

These improvements would create additional research service areas for the use of Smithsonian staff as well as for better service to visiting researchers, students, and the general public.

General Building Repairs and Improvements

An appropriation of \$779,000 is requested for several Smithsonian buildings and facilities for improvements and repairs to prevent further deterioration, improve public safety, enhance appearance, and to facilitate the program operations in these buildings.

History and Technology Building

An appropriation of \$160,000 is requested to repair the roof of the building; reroute a defective eight-inch sanitary sewer line; repair granite stonework around the second floor terrace to correct a serious leak; and install storm windows to prevent further damage due to the presence of excessive condensation.

Natural History Building

An appropriation of \$90,000 is requested to repair and clean the interior and exterior stonework; repair the stone retaining wall (for safety purposes); install drinking fountains in public areas; repair and resurface an area which includes the floor surface from the east side ambulatory to the east door and loading docks; and paint exhibit and work spaces.

Smithsonian Institution Building

An appropriation of \$197,000 is requested for additional restoration and renovation of the Smithsonian Institution building and grounds. With funds previously appropriated, the first major interior restoration of this historically important and well-known building, originally constructed in 1855, has been completed. It was necessary, however, to forego many necessary planned improvements to reduce costs. Some of the improvements which were deferred include the installation of a humidification system; repairs to the exterior stonework; painting and waterproofing; window repairs and replacements; and the installation of fire detection and extinguishing systems.

Freer Gallery of Art

An appropriation of \$84,000 is requested for the following projects: renovate the sky-light areas of the exhibit halls; construct an X-ray equipment room for the conservation program; install handrails on the public stairs as a safety measure; install special security, fire detection and extinguishing systems; and install a lawn-sprinkler system for the landscaped areas to improve the appearance of the grounds.

Fine Arts and Portrait Galleries Building

Funds in the amount of \$184,000 are requested to complete several improvements originally included in the plans for remodeling the Fine Arts and Portrait Galleries Building, but were deleted due to rising costs.

Of this amount, \$50,000 is requested to renovate an area of approximately 20,000 square feet on the first floor of the building. It was believed that this space could be reserved for future expansion, but it is now urgently required for offices, collection, and work space. This renovation work includes heating, ventilating, air conditioning, lighting, flooring, repairs, and plastering and painting. An amount of \$22,000 is requested to restore point-up, and replace damaged or deteriorated interior and exterior marble and stonework.

There are also several requirements for improvement of the protection and mechanical operations of the building, including the installation of fire detection and extinguishing systems; installation of an emergency electric power generator and a standby booster pump for the domestic water system; partial replacement of the hot and cold water line risers not replaced during remodeling; and the replacement of heavily corroded aluminum fin coils throughout the building.

Correction of the following deficiencies will contribute to the safety of the visiting public and employees, as well as enhance the appearance of the building: rebuild the exterior stone steps at the 9th Street entrance to conform to the D.C. Building Code, and improve the inner court.

Smithsonian Silver Hill Facility

An appropriation of \$64,000 is requested for necessary improvements and expansion at the Smithsonian Silver Hill Facility. An additional 10,000 square feet of storage space is planned by the construction of a steel mezzanine. Required improvements include the installation of restrooms,

a sewage disposal system, and surface-water drainage systems. Also urgently needed is the renovation of Building 1A for an automotive repair shop to accommodate the repair of motor vehicles, as well as forklifts, material handling equipment, lawn equipment, and small electrical and gasoline powered machines.

National Museum of History and Technology Library Addition Planning

An amount of \$250,000 is requested for architectural plans for additional library space in the National Museum of History and Technology. The steady growth of the NMHT collections, and the intensification of the Museum's research programs, have made its present library facilities inadequate to the needs of its staff, and of the many visiting scholars it receives each year. It is evident that this problem will become more severe in the years ahead. The Institution must begin now to plan for its solution.

In addition to this urgent general need, the Institution wishes particularly to provide appropriate facilities for a great collection of rare books in the history of science and technology that may be offered as a gift. This collection, which was brought to our attention by the Office of Science and Technology, has been appraised conservatively at substantially more than a million dollars. Its acquisition by the National Museum of History and Technology would greatly enhance our already prominent and distinguished Department of Science and Technology, and would truly establish the Smithsonian as a national center for the history of science and technology.

The original architect of the History and Technology Building has designed a sixth-floor addition that would tastefully and economically meet both the overall requirements and the particular need for added library space. Based upon a GSA estimate, this much needed improvement could be constructed, equipped, and furnished for approximately \$4,000,000.

Feasibility Studies

An appropriation of \$100,000 is requested to provide for feasibility studies on parking and a National Museum of Natural History Research Center. The parking study is to determine alternatives and their costs to achieve an adequate solution to the parking problems faced by the many visitors to the Smithsonian Institution's museums, art galleries, and other facilities. The National Museum of Natural History Research Center funds are to conduct studies, and prepare a detailed report, on the physical plant requirements for the research programs of the National Museum of Natural History, and related programs of biological and environmental research and services of the Smithsonian Institution. The studies will include restatements of the programs, site exploration and development plans, investigation of systems, buildings and services to meet the program requirements, preliminary drawings and specifications for recommended construction, a phased program for construction and utilization and cost estimates for each portion of the program.

Parking Problems

It is of paramount importance to undertake effectively, and at the earliest opportunity, the problem of inadequate parking for visitors. Ever increasing numbers of visitors journey from afar to the Mall only to be in competition for the very limited parking spaces available. Without immediate action the situation can only get worse. Underground parking has been studied but remains

a distant prospect. Off-the-Mall, or fringe parking, with the assurance of suitable connecting transportation, may provide the only practicable interim solution.

This study would be initiated with the cooperation of the General Services Administration and the National Park Service. If the public is to be served, efforts must not be delayed.

National Museum of Natural History Research Center Planning

The research collections of the National Museum of Natural History and its staff of scientists engaged in research based on the collections had by 1967 outgrown the space designed for this program in the Natural History Building on the Mall (despite the two wings added to the original building during the early 1960's). The collection of scientific specimens have continued to grow, now numbering over 55 million. Public exhibition halls have been converted to provide space for the collections and personnel, and the collections have spread into stairwells and corridors. Working conditions are intolerably inadequate. The crowded conditions of the collections are wasteful of the time of the staff scientists and of the visiting scholars who use the collections for research, for identification, and for other practical services to biologists, ecologists, and resources planners in Federal, state, and private agencies throughout the country and the world.

By far the largest collections and programs involved are those of the systematic and taxonomic sciences, which are increasingly employed in the studies, training, and planning for a better environment. In a report to the National Science Foundation by the Conference of Directors of Systematic Collections, January 1971 (The Systematic Biology Collections of the United States: An Essential Resource), it is said,

"The health of the world ecosystem depends squarely on keeping as much diversity in the natural world as we possibly can. Because knowledge of the kinds of creatures in our world is fundamental to real understanding of their interaction, the great specimen collections are the very cornerstones to studying, comprehending, and living within the world ecosystem. This nation must recognize the critical character of this absolutely essential national resource--- and---support its maintenance and use."

In the past, elements of the Smithsonian systematics program have been separated and relocated but this has proved detrimental to the unified and cross-disciplinary functioning of the work. All experience points to the need to provide facilities to accommodate all of the interlocking elements of the program in one facility with room to develop the capability to meet the growing demands for national services. It is not possible or indeed desirable to provide additional space for these collections and programs on the Mall. The Mall facilities should be developed for maximum service to the accelerating public attendance in the exhibition buildings and for the educational programs of the Smithsonian.

In 1968, the Board of Regents of the Smithsonian Institution approved the submission to the Congress of proposed legislation to authorize the planning and construction of support and depository facilities. The bill introduced by Senators Anderson, Fulbright, and Scott was passed, with amendments, by the Senate on July 17, 1970. This legislation as passed by the Senate is in process of being reintroduced in the 92nd Congress.

RESTORATION AND IMPROVING ARTS AND INDUSTRIES BUILDING

Senator BIBLE. You ask for \$3,500,000 for restoring and improving Arts and Industries Building. Is that the complete cost of this?

Mr. BRADLEY. It is, yes, Mr. Chairman.

Senator BIBLE. Part of your construction proposed at Chesapeake Bay Center is a dormitory facility. How far is the center from hotel space which would be comparable to the dormitory space proposed?

Dr. CHALLINOR. The nearest motel, Mr. Chairman, would be approximately five to six miles away in Edgewater, Md. We have normally somewhere between 10 and 15 students there every summer, they are now living in double decker bunks in one corner of the old barn we converted. We would like to build a simple cinder-block dormitory for these kids to live in.

Senator BIBLE. Do you have authority to build dormitories in situations like this?

Dr. RIPLEY. We have implied authority, yes, sir.

Senator BIBLE. You show me that. Is it spelled out in the statute?

Dr. RIPLEY. Yes, we will be glad to. As you recall, Mr. Chairman, scientists lived in the Smithsonian until well after the turn of the century. So presumably this was allowed over previous budgeting cycles.

Senator BIBLE. That was by custom but this is past the turn of the century. You give me your authority for doing it in 1972.

Dr. RIPLEY. All right.

(The information follows:)

The basic statute establishing the Smithsonian Institution vested the Board of Regents with the sole authority for the management of the Institution and entrusted the Board with the responsibility for providing "suitable buildings" for the activities of the Institution. 9 Stat. 102, 105; R.S. 5579, 5583, 5588-93; 20 U.S.C. 41, 46, 50-57. The Institution has regularly exercised this authority to provide necessary facilities, including, when the circumstances demand, space set aside as dormitory quarters for the use of scientists and scholars authorized to carry on studies in research facilities. Thus, the original Smithsonian building included necessary quarters for the Secretary and resident scholars, and dormitory quarters for scientists have more recently been constructed when required for field research purposes. Examples of such facilities currently in use are those of the Smithsonian Astrophysical Observatory at Mt. Hopkins, Arizona, and of the Smithsonian Tropical Research Institute on Barro Colorado Island in the Canal Zone. Dormitory quarters for visiting scientists have been built and maintained by the Institution since 1946 at the latter research facility. An examination of the statutes and the opinions of the Comptroller General reveals no prohibition on the construction of the proposed dormitory space for on-site researchers.

LIBRARY IMPROVEMENTS

Senator BIBLE. You are asking for funds for the Natural History Building and the History and Technology Building, and, in addition, \$20,000 for converting space and providing built-in and other special equipment to maintain controlled conditions for valuable rare books. Where will this work be done?

Dr. RIPLEY. This will be done, I believe, in the Arts and Industries Building.

Senator BIBLE. In the Arts and Industries Building?

FEASIBILITY STUDIES

You request \$100,000 to carry on feasibility studies on parking and a National Museum of Natural History Research Center. You can supply that for the record.

(The information follows:)

An appropriation of \$100,000 is requested to provide for feasibility studies on two projects.

A parking study is needed to determine alternatives and their costs to achieve an adequate solution to the parking problems faced by the many visitors to the Smithsonian Institution's museums, art galleries, and other facilities.

In addition, funds are needed to conduct studies, and prepare a detailed report, on the physical plant requirements for the research programs of the National Museum of Natural History, and related programs of biological and environmental research and services of the Smithsonian Institution. The studies will include restatements of the programs, site exploration and development plans, investigation of systems, buildings and services to meet the program requirements, preliminary drawings and specifications for recommended construction, a phased program for construction and utilization and cost estimates for each portion of the program.

ONE-TIME REQUEST

Senator BIBLE. Will it be necessary to continue these feasibility studies in subsequent years? I suppose the answer would be yes on that.

Mr. BRADLEY. These are continuing problems but this represents simply a one-time request for these particular studies. If we have additional studies of an exploratory sort, reconnaissance in nature, we would have to come back before you.

Senator BIBLE. Is it planned that the Natural History Research Center be a separate building or an addition to the present Natural History Building?

Mr. BRADLEY. We think it will have to be completely separate because we just put additional wings on the existing building on the Mall.

Senator BIBLE. You are out of space. Where are you going to get more?

Mr. BRADLEY. That is what we need the feasibility money for, to survey Federal lands, Mr. Chairman.

Senator BIBLE. All right.

PLANNING AND CONSTRUCTION OF SUPPORT AND DEPOSITORY FACILITIES

On page D-17 of your justification you indicate that legislation was introduced in a prior Congress to authorize the planning and construction of support and depository facilities. The measure, which failed of enactment, apparently will be reintroduced during the current session of Congress. Is any of the work which you propose in this budget dependent upon enactment of this legislation; and, if so, indicate that proposed work.

Mr. BRADLEY. No, Mr. Chairman, it is not.

Senator BIBLE. Well, Dr. Ripley, I think you have finished another pleasant morning.

SUBCOMMITTEE RECESS

We stand in recess until Monday, March 13, 1972.

(Whereupon, at 12:30 p.m., Friday, March 10, the subcommittee was recessed, to reconvene at 10 a.m., Monday, March 13.)

SMITHSONIAN INSTITUTION LIBRARIES



3 9088 01624 6167